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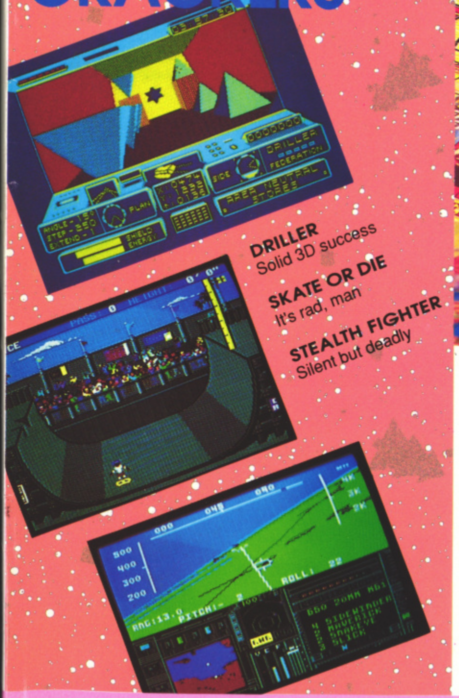

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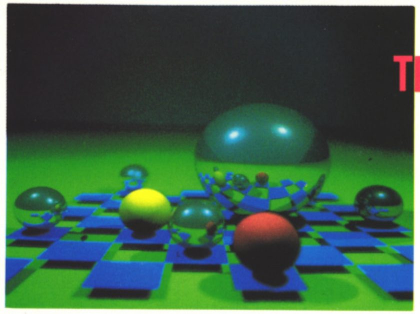

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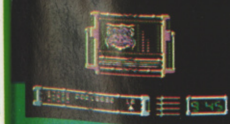

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ACE **goes out in style** on the last page of its biggest issue yet, and the editors get carried out in a **box**...

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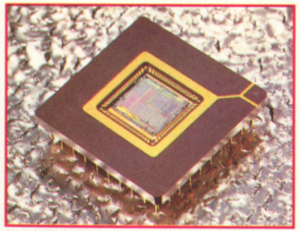
A **hard-headed look** at what you can expect on your screen in the not-so-distant future. Transputers, object-oriented games, ray tracing, super blitters...Andy Wilton squeezes **facts** from science **fiction**.



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Compilations can get you **classics on the cheap** — sometimes as many as a **dozen** for the price of a **single new release**. ACE takes the **chance** out of **choosing**.

THE SACRED ARMOUR OF ANTIRIAD
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34 Computer graphics '87

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The Access TV ad – probably not done on a Spectrum...

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46 Keyboard Cavalcade

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The proof of the Christmas Pudding is in the eating – we **pull the crackers** and **stuff the turkeys**.

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Squash the Squidoids in *Xenophobe*, or go **spectre splatting** in *Ghostbusters*.

87 Version Update

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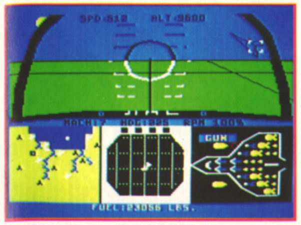
109 Tricks 'n' Tactics



High-flying performance in *F-15 Strike Eagle*.

Conquer the hi-score tables with top tips and pokes on ***Plexar***, ***Jack the Nipper II***, ST ***Gauntlet***, ***Super Mario Brothers***, ***Renegade***, ***Super Sprint***, and more.

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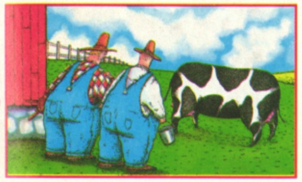

BUY LINES

120 Special Offers

Up to **£4 discount** on each of the games listed here. Chuck your **stocking** out of the window and grab a **pillowcase** instead.

119 Subscription Offer

This magazine is **going places**. Make sure you don't get **left behind**...and grab an astonishing **£10 extra discount** off those mail-order bargains at the same time.

COMPETITION

32 Christmas Casio Compo

In conjunction with Casio, ACE brings you the chance to walk away with either a **DG20 digital guitar**, or the latest **MT600 MIDI synthesiser**.

123 ACE PINK PAGES

At last! The **definitive buyer's guide** to the world of home computing. The **games** AND the **machines** to play them on, updated monthly by the **people who know** for the **people who matter**. So just sit back, and let your **pinkies** do the walking. ●

Welcome...

...to our biggest issue yet. We may only be four this month, but already some of the ACE staff feel as if they're in line for a telegram from the Queen.We thought we'd take a quick break to fill you in on what's going on...

First, there's the ACE **Pink Pages**. We've long felt there to be a real need for a proper consumer guide to the home micro industry...now there is. Whether you're after games or a new computer, these pages will point you in the right direction. This isn't just a one-off – the Pink Pages will be there every month, whenever you need them, and always bang up-to-date. What's more, from next month we'll be including peripherals as well.

Secondly, there's the ACE **1988 Diary**. We thought it would be good to get something on the cover that lasted a little longer than your average free gift – we hope the 'lasting interest' on this one will take you through to Christmas 1988, which gets it a very respectable PIC curve, and an ACE Rating in the high nine hundreds.

Thirdly, even though this is our **biggest and best issue** yet, we're beavering away on a whole host of projects for the coming year. We're playing things close to our chests just now, but stand by for a series of innvoations that will not only give you a bigger and better magazine, but also one in which you, the readers, can become more closely involved.

Finally, we want to thank YOU for the best Christmas present we've ever had – the enormous response we've had from readers has proved to us beyond doubt that there IS a market for intelligent, insightful, and entertaining coverage of home computing. Stick with us – we won't let you down.

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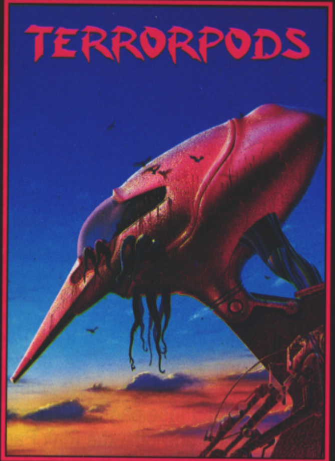

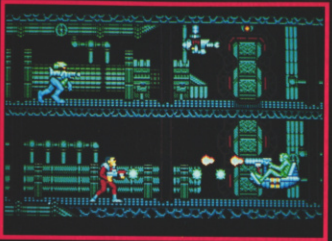

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What awaits? What technological perils and strange diabolic adversaries will try to thwart you in your mission?

Can you become Drak the Last of the Obliterators? Can you survive? Can you overcome such unthinkable odds?

COMING SOON

TERRORPODS

Its been a long watch . . . As the sun disappears over the horizon, the uninviting, grey bleakness of Colian becomes apparent. Following the intense heat of the day, the onset of night adds the bitterness of sub-zero temperatures to an already hostile environment, and the stark interior of the D.S.V. appears almost homelike.

Deep melancholy is suddenly smashed by the shrill scream of a siren. The status panel has gone crazy, an extraordinary array of lights flash uncontrollably. Good grief . . . what's happening?

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PSYGNOSIS

ACE NEWS

TELLY TIE-INS

If it moves – license' it seems to have become a software adage in the past three years. In the coming months we'll be seeing an increase in the number of titles culled from the TV screen, after what is generally termed a "poor start" in this field. Remember *Knight Rider*? *SuperGran*? *It's a Knockout*?

Until recently, the field has been almost exclusively left to micro versions of (mainly American) cartoons, such as Thundercats, Centurions, Gobots and Road Runner. Many of these have additional links – arcades, comics, toys – and the TV origins are emphasised less in the micro conversions.

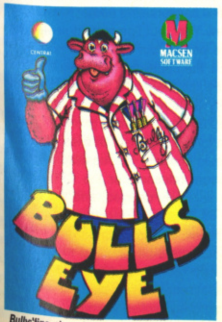
The new batch is led by Domark, which has taken over the defunct Macsen range, including *Blockbusters*, *Countdown*, *Bull's Eye* and other quiz games.

Domark has created a new label, TV Games, for the titles and is concerned that the games should capture the atmosphere of the original – so much so that they've sent *Blockbusters* out to programming team ODE for a complete rewrite. Domark's Mark Strachan claims that the rewrite is to update rather than improve the original code and questions contained, but he does admit that Domark didn't take up an option to sell Macsen's *EastEnders*, because 'it was just so dreadful".

Domark plans to release four or five titles a year on the TV Games label, the first of which will be *The Krypton Factor* with *Every Second Counts* appearing in the New Year.

Although the company is leaning towards quiz programmes at the moment, Mark Strachan says that 'we'll look into any games that are popular at the time' and cited *Blind Date* and a new programme *Strike It Lucky* as shows whose computer potential had interested him.

Piranha enjoyed some success with a micro version of the children's cartoon series *Trap Door*, and plans to release a second Trap Door game to coincide with the new TV series next year. 'The humour in the show and the nature of the characters leant itself to the computer," commented Piranha's Helen Holland.



Bully:'fine, champion, super.'

The ones we'd like to see

If you can make a game out of *Blockbusters* then you must be able to make a game out of just about anything. Here are a few programmes we'd like to see become programs:

Breakfast Time **– you'll need Amiga graphics to really get the benefit of Frank Bough's pullovers**

The Epilogue **– Bishop Rambo runs amok with his deadly crozier**

Wogan **– can you out-talk Terry over a year of gruelling shows?**

Floyd on Fish **– fillet as many turbot as you can in the time limit; but make sure you keep your wine glass topped up!**

Blue Peter **– 'and here's a game I saved earlier'**

Coronation Street **– Newton and Ridley are on strike; you, as Ena Sharples, race against the clock to find a bottle of milk stout.**

Saint and Greavsie **– 'a game of two halves. But the lad done well, di'n't he Saint?'**

A digitised Bob Holness is the gruesome prospect now facing purchasers of the game.

Code Masters Plus

Not content with selling a lot of budget titles, Code Masters are now launching a range which – by their standards – amounts to full price. *Code Masters Plus* games will sell at £4.99, with the extra three quid justified by the inclusion in the package of two cassettes. These will contain two versions of the game – 'expert' and 'ordinary'.

The idea, according to Code Masters' Minister without Portfolio Bruce Everiss, is that the expert game is unplayable until you've mastered the ordinary version. On loading the the advanced tape, you'll be presented not just with a tougher game, but with additional scenarios.

The Plus range is due to be launched in early December with *Jet Bike*, by the Oliver twins, on Amstrad and Spectrum at £4.99.

Also expected shortly from Code Masters are ST and Amiga versions of *Grand Prix Simulator*. The price isn't yet established, but is likely to be £9.99.

Knightmare

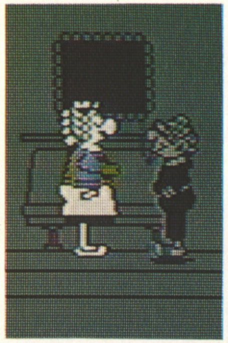
Also coming up is the micro version of *Knightmare*, the successful Anglia TV role-playing/adventure programme. It should be out now-ish for the Spectrum, Commodore and Amstrad, and for the Atari ST in January.

The job of converting *Knightmare* has some added difficulties, however. *Knightmare* the TV show already uses computer graphics, but from two Spaceward Supernova computers, which are rather more powerful and suited to the job than your average Spectrum.

Programming team Focus has attempted to circumvent this by concentrating its efforts on the plot and storyline. Nick Cooke of Focus explained; 'In essence, we've tried to capture the feel of the programme. It's presented as an interactive book, with pages turning for each change of location. There's quite a mixture of styles – you could play it more as an arcade bash, or treat it as a puzzle-solving arcade adventure."

In the game, you will play the adventurer, while the team of human advisors in the TV show has been replaced by 'good' and 'bad' oracles, whom you can consult for advice at any stage. The 'good' oracle will usually counsel caution, the 'bad' will urge you to take a more physically perilous course of action – and neither is right the whole time.

The *Knightmare* TV series has now finished and it is not yet certain whether there will be a second series next year. However, estimated figures show that the TV show gained an audience of around 4 million per episode – one of the highest ever for an ITV childrens' hour programme – so the prospects of a second series must look rosy. Not to mention *Knightmare – The Game Part 2.*



Flo and Andy face to face

ANDY CAPP

Everyone's favourite layabout should be available on micro by mid-December. And who else would it be from but Mirrorsoft? Your aim is to survive a week in Andy's tough life; that means getting and staying drunk, scrounging money, cheating on your wife Flo', spending time in the betting shop and dodging the rent man. Development house Blitter Animation are keeping tight-lipped about how you actually play the game, but they will reveal that it contains a certain amount of 'cartoon-style' violence as well as multiple-choice menus.

Talking computer

Using computer technology is no joke if you're blind; even if you can touch-type, you can't see the screen to check if you've typed the right letters. So until now the blind have been stuck with cumbersome braille typewriters. The Eureka A4 computer, however, is set to change all that; it speaks – and it's been described as 'the most significant breakthrough for the blind community since the invention of Braille.'

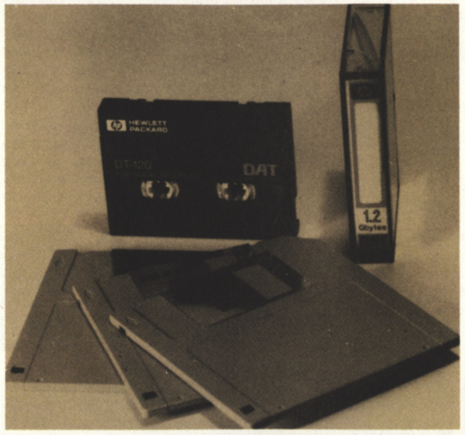
The very compact box contains a braille keyboard and function keys, and has a built-in word processing package. As letters are keyed in the speech circuitry repeats to the user what letter has been typed. Furthermore, the Eureka can be connected to an IBM-compatible PC to allow the blind to use the same screen-oriented programs as the sighted.

The machine, designed by a Czech exile and built in Australia, is marketed in the UK by Techno-Vision Systems. It should cost around £1400.

Super-tape kills CD?

Just when we were getting used to spinning a mere 500 megabytes around inside our state-of-the-art CD ROMS, the boffins come up with Digital Audio Tape – a little widget half the size of a normal music cassette that holds an awesome 1.2 **gigabytes**. Your little pocket calculator probably can't handle sums that big, but roughly speaking it's about 1258291200 bytes, the equivalent in memory terms of just under 75 million ZX81s (*with* the RAM pack).

Since the search for a reliable read-write CD ROM has been a difficult one, and the prices are around £3500 for a drive and £100-plus for the blank discs, you can see why DAT, just introduced in Japan at around £950 plus £10 for blank tapes, is a smidgin more attractive. True, these systems are for music use, but the technology carries over very easily into the computer arena.



Super cassette, super tape, super price....Hewlett Packard's DAT cassette is half the size of a standard music cassette, but holds 1.2 gigabytes (1258291200 bytes) and can access any file within 20 seconds.

Head in a spin

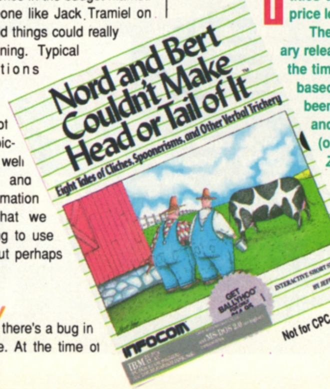
The system works by recording data onto tape using the same method as that employed by video recorders. Instead of laying the information down in a long line along the length of the tape, the data is recorded on a helical scan basis, laying tracks across the tape using a rapidly rotating recording head. The digital format not only eliminates 'noise', but also offers frequency and dynamic ranges even higher than compact disc.

Hewlett-Packard currently have a co-development deal with Sony to produce a DAT unit and although this could end up costing around £3000, the idea is that volume sales in the music industry could lower the cost of production and these lower costs could then benefit the computer market. Also, let's not forget that a price tag of three grand is not out of character with Hewlett Packard, who are not renowned for their presence in the budget market. Get someone like Jack Tramiel on the job and things could really start spinning. Typical applications would be the storage of digitised pictures, as well as audio and data information – just what we were going to use CD for, but perhaps never will.

Piracy

Of course there's a bug in the lettuce. At the time of writing Sony have delayed the launch of their Digital Audio Tape unit in the face of mounting opposition from the music industry, who believe the system will be used for pirating music from compact disks. We don't recall this sort of problem stopping the introduction of music cassettes – would it be unfair to suggest that this is because DAT is a Japanese import and an area in which European firms lag far behind?

In the meantime, the wrangle over DAT in the music business is going to set back any plans to transfer the technology onto computers. Sanyo, Aiwa, and Hitachi are all waiting for the go-ahead to release their DAT music systems over here (already on sale in Japan), but until the fuss dies down their seems little likelihood of any real headway being made in either music or computing.


Nord and Bert Couldn't Make Head or Tail of It
Eight Tales of Cliches, Spoonerisms, and Other Verbal Trickery
INTERACTIVE SHORT STORIES
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GET BALLYHOO
INFOCOM

Not for CPC owners?

Infocom revolution

Infocom are dropping their prices to £19.99 for most titles and £24.99 for the 'top-end releases'. Previous price levels ranged between £24.99 and £34.99.

The company are also promising some 'revolutionary releases' in the New Year, but lips remain sealed for the time being. We're putting our money on graphics-based games, since the company is known to have been impressed by the Magnetic Scrolls products and have recently included rudimentary graphics (on-screen mapping) in their latest game *Beyond Zork* (reviewed by the Pilgrim in this issue).

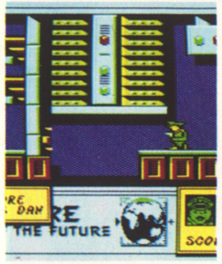
Bad news however for Amstrad owners. Recent Infocom releases for the CPC range have been regularly delayed, and the whole question of Amstrad Infocom products is under review. Will the company continue to support the 8-bit Amstrad machines? 'Probably not...' admits Activision's Clare Hirsch. Better start saving for something beefier, chaps...

Virgin marries Mastertronic

While Mastertronic were steadily increasing their interests in the computer entertainment field (see last month's Mastertronic Empire Building story) little did we know that Mastertronic themselves were being wooed – and won – by Richard Branson's Virgin.

The records/ computer games/satellite TV/publishing conglomerate paid millions for a 45% stake in the budget and arcades company. Virgin's Nick Alexander explained the move in terms of Mastertronic's expertise in fields where Virgin is inexperienced – notably, budget software, arcade machines and the US distribution of software.

The first fruits of the liaison for the UK software buyer are likely to be a budget version of Virgin's hit *Dan Dare* game; don't be too surprised if other Virgin titles find their way on to Mastertronic's list.



Dan Dare: first Virgin game to go Mastertronic

Virgin's Way Forward

Virgin are rather more deeply involved in the consumer exploitation of new technology than a look at *Action Force* or *Rebel* might suggest. Richard Branson now has interests in satellite TV, electronic publishing, traditional publishing, computer games, CD-ROM and interactive video.

In fact, so interested is the company in these fields that they've just appointed a general manager for their Interactive Video Division. William Beckett's first production for the company is an educational game based on Sir Ranulf Fiennes' Transglobe Expedition, which traversed both Arctic and Antarctic regions.

This educational 'game' will be available initially only for the BBC master system – to take advantage of the equipment many schools have installed in order to run the BBC's *Domesday* project (a latter-day` version of the Domesday book, with a plethora of maps and statistics, as well as 52,000 digitised pictures, on two laservision disks).

Richard Branson in what may well be a computer-designed and knitted pullover

Beckett describes the Transglobe program as a 'multiple role-playing adventure' whose educational value lies in the need for the players to plan, navigate and cope with meteorological and logistical factors. With 75 minutes playing time per side and up to 50,000 digitised piccys, it sounds well worth a go.

But are we likely to see anything like it for home consumption on other machines? Beckett thinks so – but probably not for a couple of years. Even then, because the technology is in its infancy, both the hardware and the software are likely to be pretty expensive; the disks could well cost between £50 and £200, while you would also need a laser disk player to interface to your micro. But new technology has a habit of falling rapidly in price if enough people want to buy it, and it may not be too long before you''ll be able to explore the frozen wastes from the comfort of your own armchair.

Snippets...

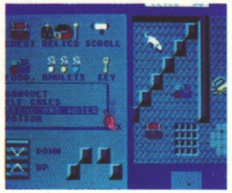
Star Wars
Domark

Spectrum	£9.95 cs	
C64	£9.95 cs	£12.95dk
Amstrad	£9.95 cs	£14.95dk
Atari ST	£19.95	

Take control of your X-wing fighter in this conversion of a four year old coin-op. Blast the Empire's fighters before you penetrate the defenses of the Deathstar. You'll still need the Force with you if you want to hit that elusive exhaust duct. Should be in the shops as you read this.

Demon Stalker
Electronic Arts

C64	£9.95	£14.95 dk



This one or two player arcade action game offers the player 99 challenging levels of mazes, monsters, magic and messages. Make it to level 100 and you'll find Calvrak the Demon ready for battle. Should be available in time for Christmas.

Octopolis
English Software

C64	£9.95 cs	£12.95 dk

Combining parallax scrolling shoot-'em up with challenging platform encounters – plus monsters and evil eyes. This one or two player number should be on the streets for the start of the new year.

Cosmic Causeway
Gremlin

C64	£9.99 cs	£14.99 dk

This follow up to the highly successful *Trailblazer* game features multi-directional scrolling and the chance for the player to buy some useful bonus which could get him out of a tight spot. Should be in the shops as you read this.

Resolution
Nexus

Spectrum price undecided

Bo Jangeborg's latest is definitley not another *Fairlight. Resolution* is a strategic, horizontally-scrolling shoot-em-up in which the player tries to save the world from a manic mining corporation determined to destroy all the Earth's natural resources.This environmentally sound game should be available in time for Christmas.

Tetris
Mirrorsoft

Spectrum	£7.95 cs	£12.95 dk
Amstrad	£8.95 cs	£12.95 dk
C64	£8.95 cs	£12.95 dk
IBM PC	£19.95 dk	
Amiga	£19.95 dk	
Atari ST	£19.95 dk	

This abstract shape manipulation game, played in real time, should be headed our way at the start of the new year.

Platoon

Spectrum	£7.95 cs	£14.95 dk
Amstrad	£8.95 cs	£14.95 dk
C64	£8.95 cs	£12.95 dk

The licensed conversion of Oliver Stone's blockbusting film of American Army life during the Vietnam War should be hitting the streets, deck, dirt or whatever in the new year.

Earthlight
Nexus

Spectrum price undecided

Pete Cooke's follow-up to *Micronaut 1* is a horizontally-scrolling shoot-em-up viewed in three dimensions. The game allows the player to move his craft from the foreground to the background of the screen. Set on the moon, *Earthlight* should be out in time for Christmas.

T-Runner
Nexus

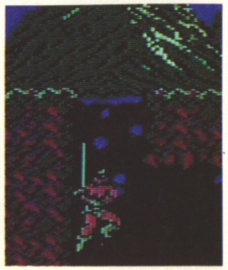
C64	price undecided

Set on a Marines training platform in space, this arcade adventure gives the player a *Marble Madness*-type view of the game area. After 300 years of lying idle, the central computer has gone haywire – and it's up to you to sort it out. Should be ready for Christmas.

Rastan Saga
Imagine

Spectrum	£7.95 cs	£14.95 dk
Amstrad	£8.95 cs	£14.95 dk
C64	£8.95 cs	£12.95 dk

Hot from the arcades, *Rastan Saga* puts the player in control of the muscle-bound, long haired, sword-wielding hero of the arcade machine. Look out for it leaping onto the software shelves at Christmas



MEN ONLY ?

Why the girls aren't joining in the fun

Anita Sinclair – 'cannot stand or tolerate feminism in any form'

The nation reeled in amazement on Wed 11th November when it was revealed that Debby – in the *Brookside* spin-off *Damon and Debby* – was writing a computer game. Coming soon to an Amstrad on the telly could be Debby's *True Romance*, a Mills and Boon-ish game – aimed at girls.

Is it just a coincidence that Infocom's own game for girls, *Plundered Hearts* (see Pilgrim this month) is coming out right now? And does all this feminine activity mean that women are becoming more involved in the playing and the production of computer games?

Certainly, there's a lot of female participation in the adventure game world. Magnetic Scrolls, with *The Pawn*, *Guild of Thieves* and now *Jinxter*, have shot to prominence in the past couple of years; and the brains behind Scrolls is 25-year-old Anita Sinclair. She reckons that women comprise about 25% of the Magnetic Scrolls audience, and further suggests that women make 'better adventurers than men.' As for herself, she admits to having written a couple of arcade games, but will not reveal their names.

Does she feel that her sex has hampered her career in the games biz? Not a jot – in fact, 'I've had more doors opened for me because I'm a woman", she says. Anita has a pretty low opinion of *Plundered Hearts*, calling it 'one of the worst games ever written', largely because she sees it as a a cynical and patronising marketing device to exploit women consumers. Not that Ms Sinclair sees herself as a feminist; 'I cannot stand or tolerate feminism of any form', she says.

Anita Sinclair doesn't have much time for arcade games; neither does ACE adventure columnist Pat Winstanley. She thinks women prefer adventures because they 'demand thought' and they're something you can stop and start with ease.

One of the few women making a living from developing arcade games is Hanan Samara, who runs development house Dalali (responsible for such recent games as *Mean Streak* and *Yogi Bear*). Even she, though, doesn't really gop on for playing arcade games; 'I prefer the design more than anything else'.\ Although there are plenty of women programmers around, most of them tend to work in the field of business software.

For the time being, at least, the boys are running the game.

Hanan Samara of Dalali – Britain's only woman arcade games programmer

Games for girls

The only recorded instance of games aimed specifically at girls that we can remember is the CCS range called – with stunning simplicity – Games For Girls. This series of arcade adventures was targetted at 7-11 girls; *Jungle Adventure*, for instance, set the heroine a perilous task in the African jungle.

The series was not a success. It was ridiculed in the computer press, and had little or no impact with girls – perhaps because the high street stores declined to stock the game. And if the high street stores won't stock them how can little girls buy them?

Trish Walters of CCS reckons that the situation hasn't changed from four years ago; very few girls play computer games, or are interested in doing so.

Telecomsoft comp – the winners

•

That massive software prize – every Telecomsoft release for your machine for a year – has at last been won. We reckon that entries ran to well over 5,000, an indication of just how exciting the prizes were. So, without further ado, here are the four winners:

Amiga owner R. MILES of Telford
ST owner GARY WHITEHALL of Glasgow,
64 owner KEVIN STEWART of Grimsby
64 owner PAUL GREAVES of Chesterfield

All four of them can look forward to a feast of software over the next 12 months.

'Orrible murders

CRL have cooked themselves up a nice little publicity-spinning controversy with their *Jack the Ripper* game (written by those eccentric ladies of St. Bride's). The recipe's pretty simple; get yourself a gory game, go along to the British Board of Film Certification and ask them to certify it, then make a lot of noise because they say it should be for the over-18s.

CRL are no stranger to this tactic; they took previous releases *Dracula* and *Frankenstein* along to the film censors as well, and duly got their certificates (and publicity). Their new game breaks new ground – or plumbs new depths, depending on your point of view – in the graphics depiction of scenes of revolting violence; the screenshot that came through with their press release showed a disembowelled naked woman, with mutilated breasts, spilling blood all over the place.

There's no doubt, of course, that the game *shouldn't* been seen by under 18s. But placing a sticker on the package saying as much is more than likely to have quite the opposite effect. And producing it on the C64 and Spectrum means that there are an awful lot of under 18s around who could play it – if they wanted to; but, *of course*, once they see the certificate nobody under 18 is going to try to buy the game, are they? And, of course, no shopkeeper is going to sell it to anyone under 18.

18 Suitable only for persons of 18 years and over

Not to be supplied to any person below that age

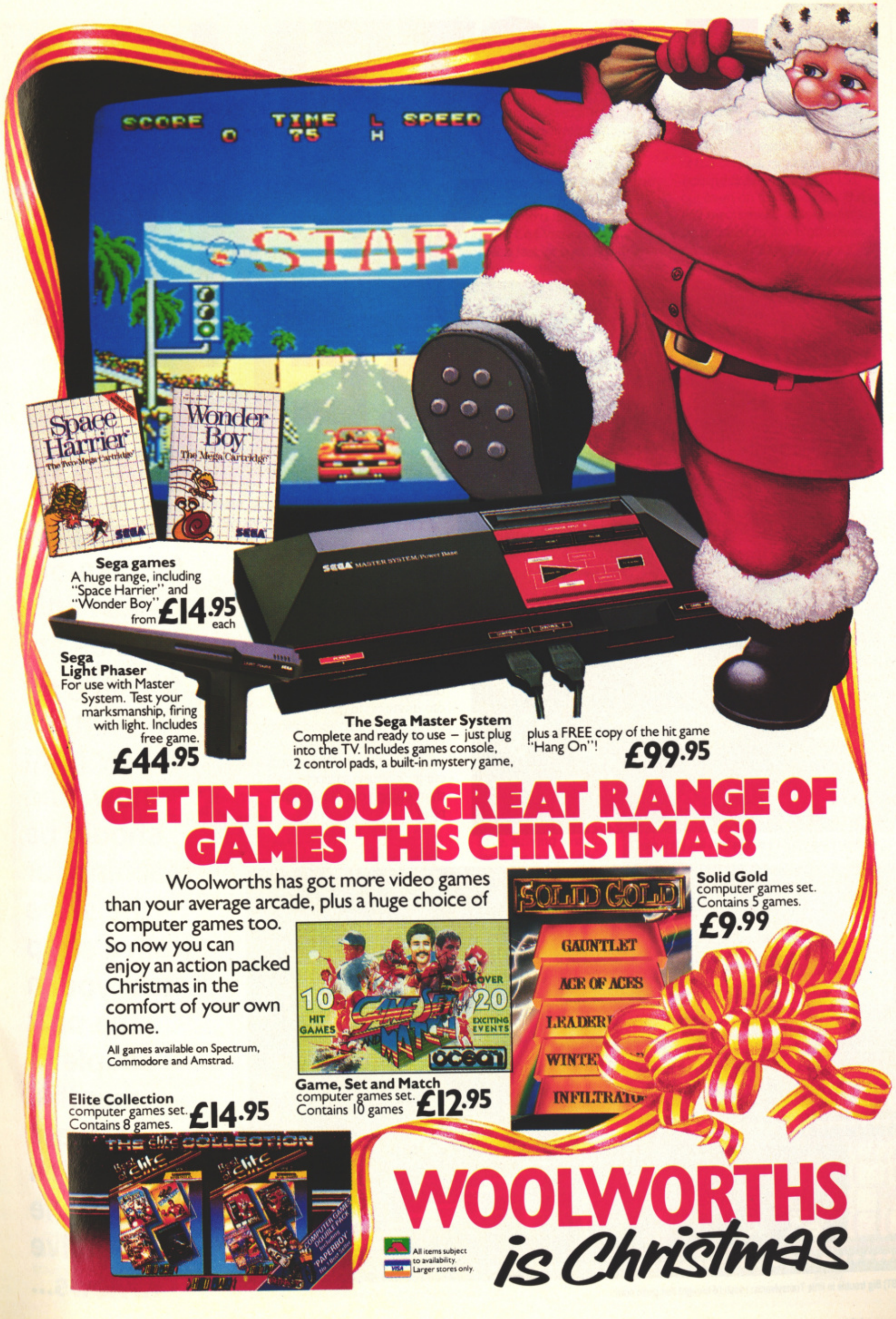
The authors of the program – those ladies of St. Bride's – disclaim all responsibility for the graphics; their input, they say, was confined to the text. Not that St. Bride's Priscilla Langridge is taking accusations of bad taste lying down; she defends the game as being an attempt to 'recreate the atmosphere of the times' and as portraying the 'struggle between good and evil' – as opposed to the 'moral anarchy' of the arcade games. The St. Bride's slant on the well-worn tale comes courtesy of 'a clairvoyant friend'; the theory runs that the murders were the work of a diabolical sect engaged in ritual sacrifice.

At ACE we haven't yet been able to pass definitive judgement on the game – neither copy we had received at the time of writing wanted to load – but The Pilgrim will speak in our next issue.

That 18 Certificate

According to James Firman, Director of the British Board of Film Classification, the Video Recording Act *does* cover computer games; producers, he says, are *obliged* to submit for classification any game containing scenes of mutilation or gross violence involving human beings or animals. CRL's program certainly fits the bill.

The 18 certificate, says Mr. Firman, means that any shopkeepers selling the game to under-18s will be liable to prosecution and could be fined up to £20,000 – if found guilty. To the best of our knowledge, however, no computer game has yet been the subject of such legal action. At the moment it is the job of the Police to enforce the act; but if, as seems likely, local authority Trading Standards Officers take on the responsibility we may well see a more vigorous attitude – and perhaps the first Computer Game Nasty prosecution.



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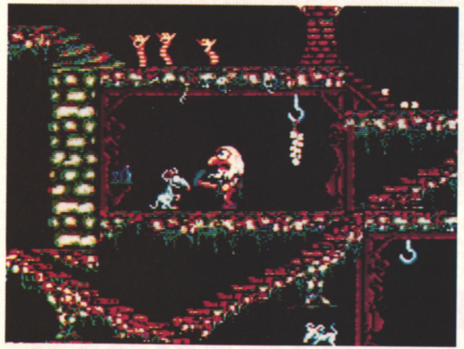
FASTEN YOUR SEAT BELT...

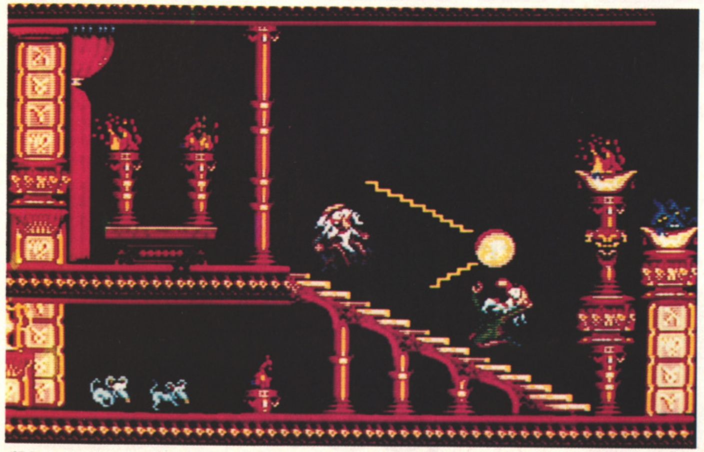
Vampire's Empire

Magicbytes

It's that oh-so-new Ariolasoft label again, with a Made in Germany platform epic for C64, Spectrum, Amstrad, ST and Amiga. If the gloomy atmospherics of these screens are anything to go by, the game's graphics should match its Draculanian theme very nicely. *Vampire's Empire* is due out in January, so start sharpening your stakes right now!

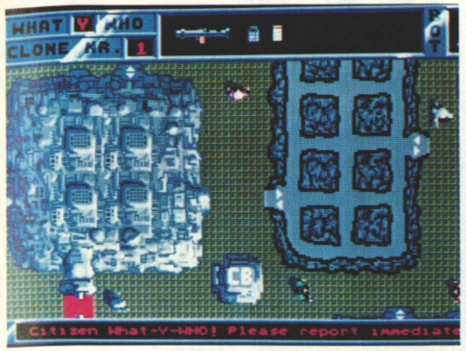


(ST) Are those things vampire rats? Give 'em a kick, just in case.



(ST) Big trouble in little Transylvania: I wish I'd brought that garlic now!

...and prepare for take-off! These little babies are queuing up on the runway right now, and should be reaching for the skies from a shop near you in the next couple of months. Check out next month's ACE for the definitive reviews...



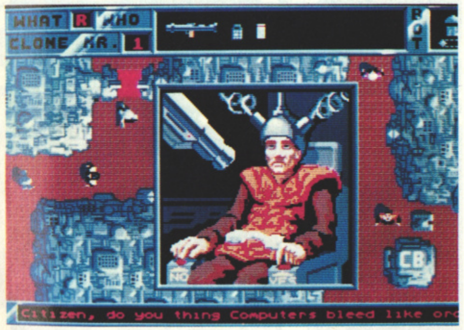
(ST) The computer issues a summons: I think it means you!

Paranoia

Magicbytes

Yet more from those prolific Germans, courtesy of the equally prolific Ariolasoft. This time the setting's an oppressive future world from which you must secretly plan your escape.

Deceiving the state's a risky proposition, so mind the central computer doesn't catch you at it! The game's due out for all major micros some time in January.

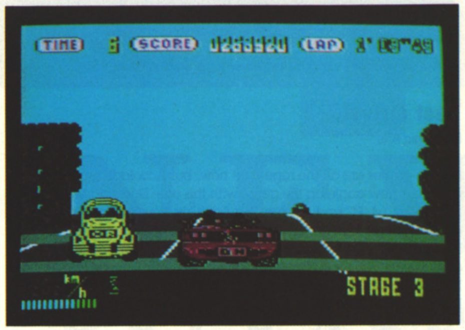


(ST) The 64,000 volt question: get the answer wrong and you really won't like the consolation prize.

Out Run

US Gold

This incredibly long-awaited coin-op conversion hits the streets on C64, Spectrum, Amstrad and ST very soon, and it's still not clear how the home micro versions will measure up to the original's very high standards. The nearest thing we've seen to a finished product so far is a C64 version with a very nice feel for speed and gradient along with some impressive trackside features - palm trees, spectators and the like - but still no gameplay. The production version'll have a tape of the original arcade music, so *Passing Breeze* fans won't lose out even on the Spectrum. But will mechanical violence fans be satisfied by the high-speed crashes? Wait and see...

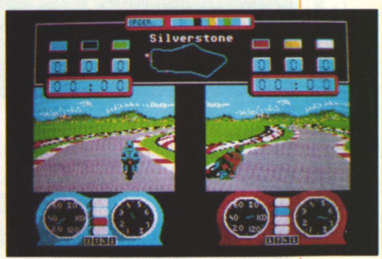


(C64) Overtaking a Beetle (or is it a Fiat?) on the rock-lined highway of Stage Three

Grand Prix 500cc

Loriciel

Yet more racing action on the way, this time from across the channel. Tear round the world's Grand Prix circuits on your half-litre bike, striving to outdo computer opponents or a fellow human being on your ST or PC.

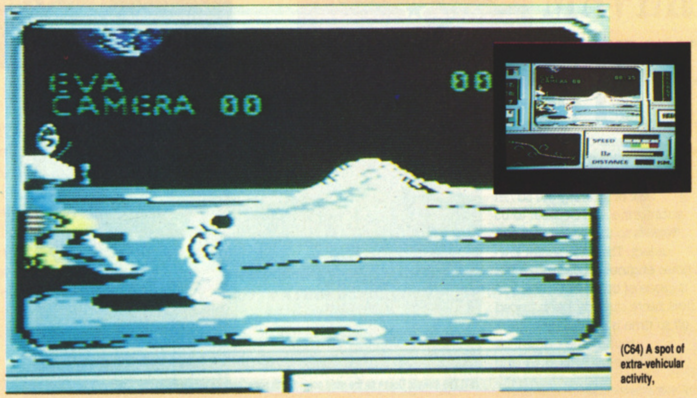


(ST) Burning rubber at Silverstone.

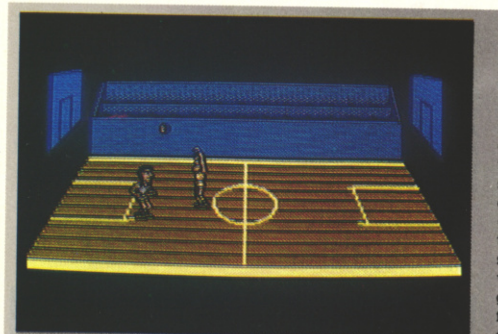
Apollo 18 – Mission to the Moon

Electronic Arts

US computer game patriotism may lead to some pretty grotesque re-enactments - bombing Libya *again*, for crying out loud - but this Accolade title proves that it can also produce some commendable ones too. The NASA Apollo programme might have ended back in the early seventies, but that final mission could be lifting off on your C64 real soon now. From countdown to splashdown, the moonshot's in your hands.



(C64) A spot of extra-vehicular activity,



(C64) A pre-production version, with a few features still to be added. Who needs hoops anyway?

Basket Master

Ocean

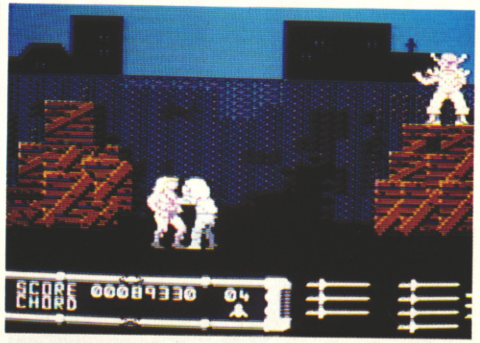
Spanish sideways scroll specialists Dinamic turn their attention to indoor sports with this forthcoming basketball sim. One-on-one B-ball's a far cry from *Freddy Hardest* or *Game Over* of course, but there are certainly signs of the same graphic flair here. (If you'd still rather shoot bad guys than baskets, watch out for Dinamic's *Navy Moves*, also due out from Ocean early in the New Year.)

Masters of the Universe

Gremlin

Based on the forthcoming Dolph Lundgren film, this new tie-in follows cartoon character and sometime plastic toy He-Man as he and his companion Teela battle the forces of the arch nasty Skeletor in (of all places) modern day California. If you've got a Spectrum, C64 or Amstrad you can defend the universe from evil later this month.

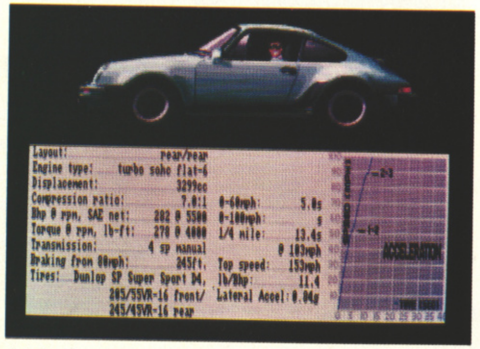
(C64) He-Man battles it out with the forces of evil in a dark alley. ▼



Test Drive

Electronic Arts

Driving games are all the rage right now, but Accolade have come up with a new angle on the genre with this one. Due out from EA this month on C64, PC and Amiga, *Test Drive* lets you try out some of the world's flashest high-performance cars - Ferraris, Lamborghinis and Porsches all make appearances - over timed road courses. The title aims to give you the feel of the different cars' handling characteristics, but don't spend too long assessing high speed performance or the Highway Patrol will collar you!



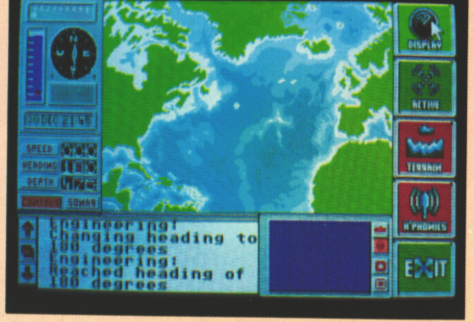
```
Layout:                    rear/rear
Engine type:     turbo sohc flat-6
Displacement:                 3299cc
Compression ratio:             7.0:1  0-60mph:          5.0s
Bhp @ rpm, SAE net:       282 @ 5500  0-100mph:            s
Torque @ rpm, lb-ft:      278 @ 4000  1/4 mile:        13.4s
Transmission:            4 sp manual                @ 103mph
Braking from 80mph:           245ft.  Top speed:      153mph
Tires:  Dunlop SP Super Sport D4,     lb/Bhp:           11.4
             205/55VR-16 front/       Lateral Accel: 0.84g
             245/45VR-16 rear
```

(Amiga) Fancy a spin in this Porsche 911? 0-$100 speeding fine in under five seconds!

The Hunt for Red October

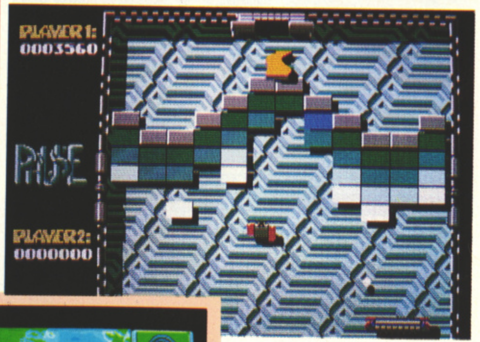
Argus Press

The game of Tom Clancy's book - a kind of underwater *Firefox* - this one sets you the task of steering the Soviet submarine Red October to US waters so that its officers can defect. The sub's secret low-noise engines would make this a piece of cake, but the Soviet fleet have already been tipped off so time is short. Due out this month, the game'll be available for Amiga, ST and PC.



Engineering!
Changing heading to
180 degrees
Engineering:
Reached heading of
180 degrees

(ST) The Atlantic Ocean on the main screen, with sonar options on the right.



▲ (ST) Good looking screen, even if the ball is a little difficult to see against that background

Tonic Tile

The Edge

Just can't get enough of those *Breakout* clones? Played *Arkanoid* and *Impact* to death and still want more? Then take a look at this French bat'n'ball effort due out on the ST any day now. There'll be a full review in next month's issue, but this screenshot should give you the measure of the game graphically speaking.

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NEWS

OOTING, AMBLING AND MUGGLING

TAI-PAN

REPORTS filtering through from Hong Kong suggest at the might of TAI-PAN is threatened as a pretender to his le is now becoming stronger every day after a speight of rate attacks on innocent merchant ships and an uncanny n of good fortune in the gambling dens. Although rumours w suggest that his own empire may well be in jeapardy as utiny strikes throughout his fleet.

COLOUR VANISHES

WIZBALL

THE evil Zark strikes again to leave our world void of all its glorious colour.

Our only hope now is for the magical powers of Wiz and his fantastic feline friend, Catelite to perform their wonderous deeds – indeed, Zzap has already been quoted as stating "the finest release this year".

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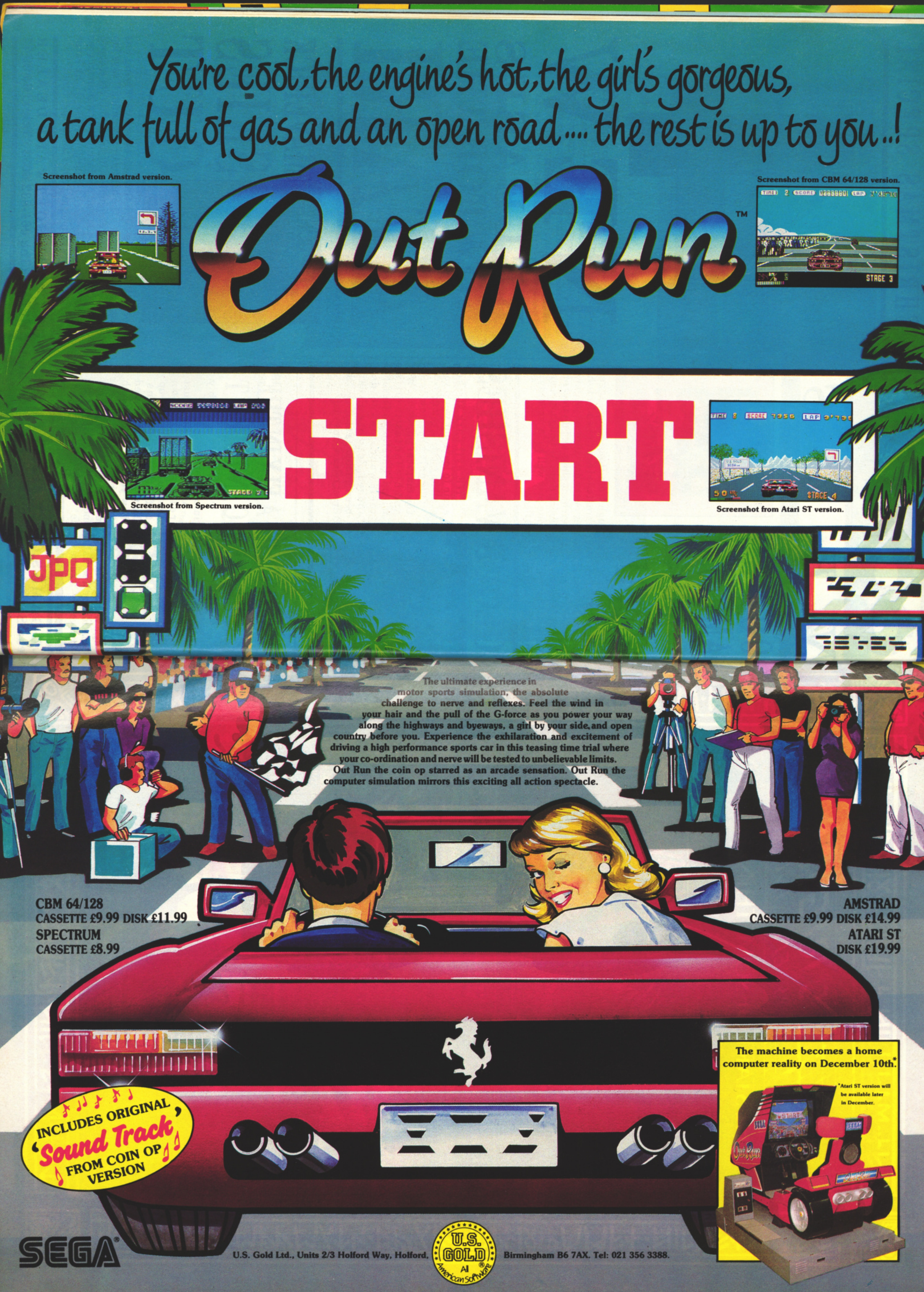
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Screenshot from Amstrad version.

Screenshot from CBM 64/128 version.

Screenshot from Spectrum version.

Screenshot from Atari ST version.

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*Atari ST version will be available later in December.

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ACE LETTERS

Some spicy stuff in the mail-bag this month: boasting software pirates, accusations of anti-Amiga bias, accusations of anti-ST bias (can we be biased against *both*?), and letters from our oldest (71 years old) and youngest (5 years old) readers. Keep sending the goods to ACE LETTERS, 4 QUEEN STREET, BATH BA1 1EJ

Pin up

I am a loyal reader of your sister magazine, Amstrad Action, and on a recent trip to the local newsagent I spotted a glossy new mag called ACE with a special on solid 3-D games (my favourite).

Flicking through the letters section I read the first letter, and thought 'Ah, so that's where Connor sneaked off to, nothing to do with the Foreign Legion after all.

I have a suggestion: my bedroom wall is plastered with artwork and posters from various computer magazines (not that I read them) and I know that a lot of my friends' walls are too.

Why don't you publish a photo/poster/pin-up of the ACE production team? We've never seen them, or are you too ashamed of your handiwork?

What does Carrie-Anne look like?

Dominic Lacey
Great Eversden

The ACE production team are a shy, retiring bunch. They work for the quiet satisfaction of doing a good job, rather than fame and publicity. As for Carrie-Anne (our subscriptions supremo) she's a creature of rare beauty. Unfortunately, she too is a timid type and does not wish her photo to be printed.

Commodore 128

Since you were unable to help R Johal in his search for software for his new Commodore 128 and 1571 disk drive (November Letters), as one of the first C128D (the all-in-one version) owners and an ICPUG member, I thought I might enlighten you both.

Gameswise, there is very little specifically for the C128. I know of enhanced versions of *The Last V8* (Mastertronic) – disk only at £4.99, and *Rocky Horror Show* (CRL) – cassette at £9.99 (maybe disk as well) and it is of course, the only 8-bit machine running the full range of Infocom Interactive Fiction – mostly in C64-Mode but the 'plus' titles (*Mind Forever Voyaging, Trinity* and *Bureaucracy*) can only run in 128 mode and only on 80-column monitor.

There is a far larger selection of more serious software (word processors, databases, compilers, programming languages, etc) available in 128-mode versions, such as *Superscript* and *Superbase* (which can load together on a 128), *Vigawritre, Petspeed* and *Oxford Pascal*, all of which can regularly be found advertised by both publishers and Commodore specialist retailers.

In addition, any CPM+ software whose publisher can be persuaded to supply it on 51/4" disk in Commodore GCR or IBM, Kaypro, Osborne or Epson MFM formats can be read by the 1571 and run on the C128 – I understand that at least one ICPUG member has been able to obtain Locomotive Basic as used on the Amstrads in this way for about £50, and it should be possible to obtain other programs also.

If Mr Johal is musically inclined, Compute's *Music System* for the Commodore 128/64 (Compute! Books), an American book/disk package similar to Rainbird's *Advanced Music System* with 128 and 64 versions on opposite sides of the disk.

Finally, if he joins the Independent Commodore Products User's Group (ICPUG) cooperative for £10 a year (plus £1 on joining for a share), he will have access to their free libraries of public domain software for C64 , C128 and CPM+, amongst others, covering both leisure and serious programs in all 3 modes, just by sending a blank disk or two plus return postge and packing to the appropriate librarian, and will receive 6 copies a year of their excellent magazine as well. Contact the Membership Secretary, Jack Cohon, at 30, Brancaster Road, Newbury Park, ILFORD, Essex 1G2 7EP, or ring, 01-597 1229 (days), 01-346-0050 (evenings)

Alan Wiggins
Oxford

That's a whole lot of useful information for C128 owners; I'm sure they'll be most grateful.

In a cleft stick

I am going to get a new computer, a BBC or a ST. I'm thinking of getting a BBC as it's the same as the school's got and I am taking GSCE Computer Studies. I like the ST as it's got a huge memory and built-in disk drive. Can you please give me some advice?

P Bourn
Hurstpierpoint

Tricky one. A BBC Master is likely to be more expensive than an ST, with a lower spec. The BBC has loads of software available, but the ST is getting more interest at the moment and is likely to get more in the future. But there's that GCSE to consider; I think you need to ask yourself just how useful it would be to have the same computer at home as at school – don't most people taking computer studies do quite nicely without having a computer at home as well? Not many people buy a microwave just because they're studying cookery.

Where's Ultima?

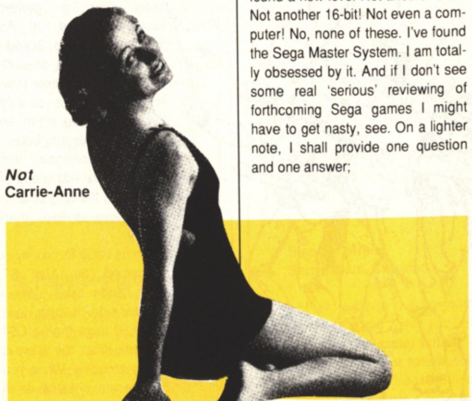
Compared to the dull drivel of so-called rival magazines your mag is brilliant! I am amazed at your fantastic offers for the Atari ST – saving £12.44 for *Gauntlet*!! But, you seem to have made an error in the Atari ST versions of *Arkanoid*. It costs £14.95 in the shops, not £19.95.

When I saw your COLOUR reviews and your ingenious PIC, I was simply astounded. Your reviewing team have managed to do really in-depth reviews of games. I loved the huge 2-page review of *Skulldiggery* with a hint section! Brilliant! I immediately went out and bought it and I fully agreed with the 919 rating you gave it.

Keep up the good work and please continue to support the ST. Can you tell me when *Ultima IV* will be released for the ST. I've been waiting for it for months.

Gavin Lim
Chislehurst

We've already seen an IBM version of Ultima IV, so we reckon the ST version shouldn't be too far away; rest assured that we'll review it as soon as we can.



Not
Carrie-Anne

Sega is as Sega does

My beloved CPC 464 is keeping the garbage from getting lonely in the rubbish bin. Why? Because I have found a new love. Not another 8-bit. Not another 16-bit! Not even a computer! No, none of these. I've found the Sega Master System. I am totally obsessed by it. And if I don't see some real 'serious' reviewing of forthcoming Sega games I might have to get nasty, see. On a lighter note, I shall provide one question and one answer;

Question – Is there a catalogue I can purchase reviewing Sega games?

Answer – Turn on your Sega Console without cartridge or card in the machine and hold buttons one and two and the direction controller down. Something will happen?

Kurt Sega really is my name!

Kurt Sega
London

With a name like that I suppose you were destined to fall for the Sega. We all wish you both the greatest happiness for the future. If you write to Mastertronic they should be able to send you a catalogue of Sega products.

XOR offer

Could you please tell me about your special offer on *XOR*. Does this include the "Icon Designer" and "XOR Designer" which I have read about in an advert for the game. If not how much would it cost to buy all the above from you? Would there be anything off the price of the "ICON" and "XOR" designers if they are a seperate package from the actual game which is exactly the type of game I've been looking for, and your review in issue one made me decide to purchase, and your discounts hopefully will persuade me to buy many games from you in the near future. If you could please answer my questions about "XOR" etc. Then I would be most grateful.

Mr D Kyle
Watford

The XOR Designer is a separate product, selling at £14.95 – but on the BBC only. It's not available through ACE.

Help!

Help! I bought a Spectrum +2 about 8 months ago and ever since then Ocean, Imagine, U.S. Gold games will not load except the odd one. Why is this? And is there anything I can do besides buying a new computer?

Darren Moore
Wigan

We haven't had any problems here with our +2 but we only got ours in July. There were some problems with older games, due to the slight differences between the old 48K Basic and the +2's Basic. We suggest you try all the normal adjustments, such as checking the azimuth settings, and also – if you can – try out the games on another +2. If there seems to be something wrong with the software rather than your computer, then get in touch with the supplier of the game and see if they can help or if they will exchange the games.

Who does he think he is?

I have several points to make so I have numbered them:

1) Who does R R Moranzani think he is? I refer to his letter in issue 2 of ACE. There is nothing wrong with the cover and it is much easier to see what great articles are inside than a piece of artwork for one game. Mr Moranzani also says that you need more colour inside ACE.

2) ACE has more colour reviews, screen shots and articles than most other computer magazines available. Also comments like "what wuz dat ed?" are not in the least bit funny and only make the magazine look immature and stupid. Plus the fact that ACE will not get extra readers by pinching ideas from other magazines.

The only thing I can agree with R R Moranzani over is the rating system which is a very interesting idea, especially PIC.

3) Do you know if there will be the Commodore Show in Manchester and if so when? Last year's show was a bit of a disappointment as none of the software houses support the north.

4) Thank to Pat for a great *G.A.C.* column. Being a Commodore *G.A.C.* owner I find it very interesting.

5) The competitions are great and I think that the prizes are very good and I hope to see more of them.

6) Finally, a word about the reviews. They are very informative and I especially like how you put labels on the screen shots, sometimes you cannot always tell the goodies from the baddies (to put it bluntly).

Thanks for a refreshing change to the normal computer magazines which seem to spend most of the pages slagging each other off.

Mitch Pomfret
Bramhall

Poor old Moranzani's taken a bit of a beating on these pages lately; let's make this the last letter taking him to task. At them moment we don't know of any Commodore Show planned for Manchester.

Never heard such rubbish

I am not sure whether there's any point in my writing this letter about an article written in your third edition of ACE, as the article, about Amigas and Atari STs, was clearly written in a very deliberate and subtle manner.

My observation is that all the good points of the Amiga were highlighted on the first colour pages whereas the good points of the Atari ST were left until the bottom corner of the following black and white pages, which is obviously not so likely to be read by many.

As for your feeble explanation about the Amiga's lack of software, again on the first page, I have never heard such rubbish in all my life. In America, the Amiga has had higher sales from the very start, mostly A1000 and A2000 models, and in that country it is regarded as a games machine. The Atari ST has never held such pretentions; it has been aimed at the games market from the start and even now Commodore don't seem bothered. I don't see why your magazine should do their job for them.

Your comparison with the C64 software explosion simply does not hold water, as that computer was a games machine out and out. As for Germany and Scandinavia, their effect on software can be no more than minimal. I suspect you only threw those two in, in an effort to con us into believing that somehow this country is the odd man out rather that the only country with more sense than money.

As far as value for money is concerned, the Atari ST wins hands down. When you consider it costs less than £50 more than a C64 and disk drive, the value is simply amazing. When you ask the vital question as to how much extra one should pay for the extra hardware contained in the Amiga, I would suggest the answer is not £200, as at present. A further £50 or even £100 might be acceptable, but again, when you consider the serious lack of software, what's the point of the argument at all.

I have enjoyed the first two editions of your magazine, but not so much the third. Atari deserve success with the ST machine and if you continue to run it down, I and I suspect many others will not buy any future issues. Be warned!!

R J Lattimore
Havant

Of course the article was written in a deliberate and subtle manner; we wouldn't want to have written something that was slapdash and moronic, would we? As for accusations that we're anti-ST, I think you're wide of the mark; both Amiga and ST were featured on the colour pages opening our investigation; we didn't make any attempt todisguise the price difference between the machines; we stated clearly, but without any favouritism, that the Amiga has a superior technical spec; we merely presented the issues, and left the readers to make their minds up.

ST bias?

I think that your mag is great, but – and a big 'but' it is too – why are you doing most of the 16-bit work on the ATARI ST? I know it is a great machine, but come on, it's not the only one on the market! I own an AMIGA 500, and a mean machine it is too. I think that it was well worth the extra cash and that it deserves more credit than it gets, what with its 4096 colours and the excellent sound it can produce. I can guarantee the quality of the games it has to offer. The price for the ST is very good indeed and is well worth the money. But, if you want to get something really special get an AMIGA. I can tell you it is well-worth the money! Not trying to slag off any computers, but I think the AMIGA just has the edge on the ST.

Steven Wright
Brackley

We review as much Amiga games software as we can get our hands on, and the Amiga features nearly every month in the Graphics section. It doesn't feature so much in Music, largely because there's very little around in comparison to the ST.

Anti-Amiga mag?

In your first issue you supply a free cassette for Spectrum and C64 owners, but if you own an Amiga you get a piddly little £8 off some old games not even worth your discount prices. If Speccy and CBM owners think the free game is rubbish they can still use the tape as a blank. Me, I have to fork out £17.00 for a rubbish game/blank disk.

Also Amiga reviews are thin on the ground. Your graphics review said that the HAM mode of the Amiga is 'rather impractical' with 'very nasty restrictions'. I suggest your reviewer has a look at *DigiPaint*.

I look forward to Issue 3 with free software/blank disk for the Amiga (the ST and the Amstrad are also getting a raw deal).

G. Pracy
Attleborough, Norfolk

We are not 'anti' any computers. I reckon the offers to Amiga owners (and others) were pretty attractive. We review as much new Amiga software as we can get our hands on. We could possibly give away Amiga games on the cover – but would you be happy paying £4.00 for the magazine? I trust you find the gift on this Christmas issue compatible with your machine.

Happy Amstradian

I am writing as a delighted Amstrad owning reader, having taken full advantage of the first two issues' special offers and saving over £15 on two excellent new disk games. Those savings would have been much better to me than one (old) free game and a demo that would hardly last five minutes.

The magazine is superb; far more mature, more stylish, more colourful and with better features, reviews, and special offers than any of the rest, Issue 3 being the best yet. As soon as I can afford it, I will certainly subscribe and save even more money.

Tim Hix
Tavistock

It's nice to ge a letter from an Amstrad owner who's realised just how marvellous our special offers are – and just how marvellous the magazine is.

Gamesy-wamesy plea

I own a BBC Micro B and was doing quite well for Software (considering I own a BBC) until all of a bloomin' sudden all those lovely games that had been converted from machines like the Spectrum and Commodore were just wiped off the shelves to make more room for the more popular micros. So before I go and spend all my hard-earned pennies on a C64, could you tell me whether all those nice, kind, considerate personages are going to make a gamesy-wamesy or three for my puny Beeb.

Paul McKay
North Cheam

Superior and Audiogenic still seem to be committed to BBC 'gamesy-wamesys' (as you revoltingly put it). But we can't think of many other people producing the stuff.

Not running the Gauntlet

I own a Commodore 64, complete with disk drive, and printer. Around January this year, I purchased *Gauntlet* on disk for the aforementioned 64. During play, the game repeatedly crashed at random points, making it totally unplayable. I returned the disk to the shop I bought it from and was given a replacement. This replacement copy did exactly the same thing as the first. Rather than return the game yet again, I wrote to U.S Gold and to this day I haven't received a reply.

Recently, a friend gave me a copy of the game which worked perfectly on his machine, yet crashed just like the rest, on my machine. I sent this copy to someone else, who said it worked fine for him, which leads me to the point of this letter.

My 64 is quite old, indeed it was purchased shortly after Commodore first released the machine, and this I asume means that there must be some difference between it and later versions which hitherto have not become apparent.

All other software I have works perfectly , but I wonder if the situation might occur with future releases, and if there are any other ancient Commodore owners who have had any similar problems.

Being a student, I can ill afford to spend lots of money on software, particularly if I have no idea if it's going to work on my machine, something which I am now going to have to consider.

I will be writing to U.S. Gold again, but would ask you to print this letter and do you think there is any chance of getting some recompense for spending nearly £15 on a game that doesn't work on my machine?

Howard Crowe
Harpenden

We don't know of any specific hardware changes Commodore have made that would result in your disk not loading – but that isn't to say that there haven't been changes. We assume that you've taken every precaution you can, such as unplugging all unnecessary peripherals. US Gold themselves should be able to supply some suggestions, if not explanations, and we reckon that in the last resort they ought to refund your money or offer you an alternative game

Is this a record?

I got 137,470 points on your *Bubble-Bobble* demo tape. Is this a record for my age? It was on a Spectrum +2.

William Barford, age 5 years.
Northampton
and his mum who wrote the letter and saw the score

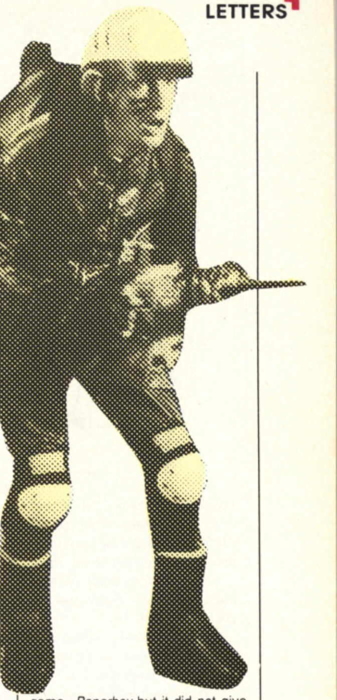
Yes, it probably is a record. Any under-5s out there who'd care to challenge?

Wise guy

In the "Winner or Wimp" feature *Skulldiggery* problem (page 42) there is a solution, surely? You may get killed but if you get the top diamond first then dash for the bottom one, I think you will get it just before you get crushed. But the problem was just about getting the diamonds, wasn't it? Do I get a special prize for being clever (*Skulldiggery* for my ST?). No, I didn't think so.

David Hood
Glasgow

Any more letters like this, chummy and you'll be in real trouble. We've got your address on file.



Paperboy problem

Thanks for a brilliant and exciting magazine. But there is one question I want to ask you. In Issue 2 – Tricks 'n' Tactics section I typed in the *Paperboy* program. I then checked it and then saved it, I then ran it as you said and loaded the game *Paperboy* but it did not give me unlimited lives. I checked and checked it but it still did not work, could you tell me why? Oh, and by the way, I've got a Commodore 64.

Lee Howard
Wheathampstead

The poke worked OK on our 64 in the office; we can only imagine that either there's something wrong with your machine or that there's something different about your copy of the program that means the poke doesn't work

Mail order misery

I was wondering if you could give me some advice on my rights as a consumer. As a result of your first issue I applied to a software house for some goods. Since then I have written to them four times and only received two out of four of the items which I applied for.

Both of the other two items have been readily available since I applied, and the software house have not written back.

Stephen Strain
Shrivenham, Swindon

First of all, write to the company concerned and tell them you are going to take the matter further. If you still do not receive satisfaction, get in touch with your local authority's Trading Standards Officer, or

Cad of the month

ALL PRICES ARE

I don't believe the price of ST software – £25 a piece! That's four for £100! And I bought my car for that price. PLUS, I get a lot more mileage out of my trusty Triumph than *Starglider, Goldrunner* or even *Supercycle*.

Luckily I found a person who gives me a copy of any ST title for the price of a blank disk.

Thank God for software piracy!

A. 'Doley'
West Midlands

You seem rather proud of your piratical exploits, but have you stopped to consider that the more people who behave as you do the longer ST software prices will remain as high as they are and the longer software houses will have an argument for keeping them high? Piracy on this scale is tantamount to stealing not just from the company, but from other, honest consumers. You should be ashamed of yourself.

Commercial piracy?

I wish to tell a tale of naughty deed that I happened to witness only two days ago.

I work in ***** city centre and during my lunch breaks and I like to go out and look around the shops. On this day in question I decided to go into ***** to see what demos they were running on their A500s and A2000s, and on their Archimedes. On the Archimedes a demo was running showing its version of the Amiga's Hold and Modify. The Amiga 2000 was running a short demo for thicko businessmen explaining the advantages of multi-tasking.

The Amiga 500 on the other hand was being used by a member of staff for rather personal purposes. He was using an item of software called *Marauder* to – apparently — copy a disk. I have no idea which item of software he was copying, and I have no idea of whether it was for his personal use or for use in the shop, but it smacks of pure hypocrisy when the software

industry and the computer magazines attack home and business users on the matter of piracy, while people in a position of trust and responsibility treat the products that they sell as theirs for the taking.

I am not moralising on whether or not piracy is acceptable as I transfer games from tape to disk on my C64 and I also receive copies from friends, but I would like to draw attention to an area which is avoided as mcuh as possible by many magazines. So often home users have been attacked by the editorial staff of certain magazines that one can get the impression that the sun must shine through their anal orifices. I would just love to see some of them in the sort of pickle that some of the American TV evangelists are finding themselves in. I hope you don't take the editorial standpoint of being morally superior as it would ruin a lot of good debates in your letters pages.

To round off I would like you to answer truthfully the following questions:

1. Have you ever copied an item of software for any reason?
2. Do you know anyone who has copied software for any reason?
3. If you are impressed by an item of software you receive for review and at the end of the day two members of staff desire to take it home to play, do you copy it for the second person?
4. What do you believe is responsible for software piracy?
5. Do you believe there is a remedy to reduce or stop piracy?

I hope you answer this letter in a fairly sensible manner. Please don't write half a page of bull slagging me off.

Stephen Sheridan
Kings Norton

Answers:
1. Yes
2. Yes
3. No
4. A combination of poverty, high prices and dishonesty
5. More money for everyone, lower prices, more honesty

ask the local Citizens Advice Bureau to help.

In the last resort, of course, you may have to go to the police – but usually these things are settled before that stage.

Adults only?

I've enclosed an Amiga disk of some of unusual digitised material – put that in your magazine if you dare....or are you just aiming at kids? I have plenty more material, a good understanding of the art side of the Amiga and all the art packages available if you need reviewers.

Mark Hodsman
Gainsborough

No, we're not 'just aiming at kids' – that's why we're not printing your photos.

Controversy of last month

Sorry about my letter you printed! It was a little unclear. I believe strongly against the abuse of women! But enough of that! I thought I might take up your pointt of excessive violence in the computer gaming world. I think that

Ocean, U.S Gold etc have simply found the soft spot in a gamer's heart. However, many of us claim that we are pacifists; the fact is we all like nothing better than a good episode of the A-Team or a really gory Stephen King masterpiece.

As for computer games, *Rygar* is a fine example of a promotion ad for a game. In the arcade, I bet you don't think of it as carving a wedge in some poor soul's chest. No! It is merely a bashing of meanies to gain points. Similarly, I don't think that violence is really taken that seriously in computer entertainment. Take *Commando, Green Beret, Who Dares Wins* and the huge amount of clones all based around the unnerving butchery of a Vietnam army, nobody cares as long as the game plays well. There is a little devilish part of us that gets released whilst playing though, I can remember me smirking with glee when I punched a club wielder in *Renegade* off the end of the subway! Ha!

Demetri Panayi
Harrow

Failed expectations

I was delighted when your magazine appeared on the news stands but, alas, I have again been lulled in to subscribing to something which does not come up to my expectations.

Believing that with the staff who produced Personal Computer Games this was a rebirth to cover the disappearance of Computer Gamer, which was my favourite mag, I readily sent off my sub.

As a pensioner of 71 years I used to enjoy typing the listings in the now defunct publications. Not all of us are computer boffins and there was always a lot of pleasure in getting the listings correctly on to tape and watching the results, even though I admit that these were not up to the standards of commercially produced games.

Unfortunately I see from your reply to John Hammond (Issue 2) and Don Griffin (Issue 3) that you hold the supercilious view of the expert that the interests of the novice are not worth catering for. Even an occasional listing would be welcome, but if this is not forthcoming I shall be glad when my sub expires and I shall no longer have to bother trying to find something in your mag which is of real interest to me.

C.Gannan
Redcar

I'm sorry that you don't like the magazine, but I'm unrepentant about our decision not to run listings; in this age of ever more sophisticated software it seems to use that there is just no point at all in spending hours typing in a Basic program – and even less point in devoting valuable space to them in the magazine. It's not as if we promised to print listings and then changed our minds; we said from the very beginning that we wouldn't have them, and that desision is not going to change. As for 'the supercilious view of the expert' etc., I think you're barking up the wrong tree; although some of the articles in ACE are written by boffinish people, we always bear in mind that our readers are a mixed bunch spanning a wide range of experience and knowledge.

Personal replies

Please don't send SAEs or ask for a personal reply to your letter; we just haven't got time to give individual replies. If it's at all possible we'll print letters and help you out on the page. More than that we can't promise to do.

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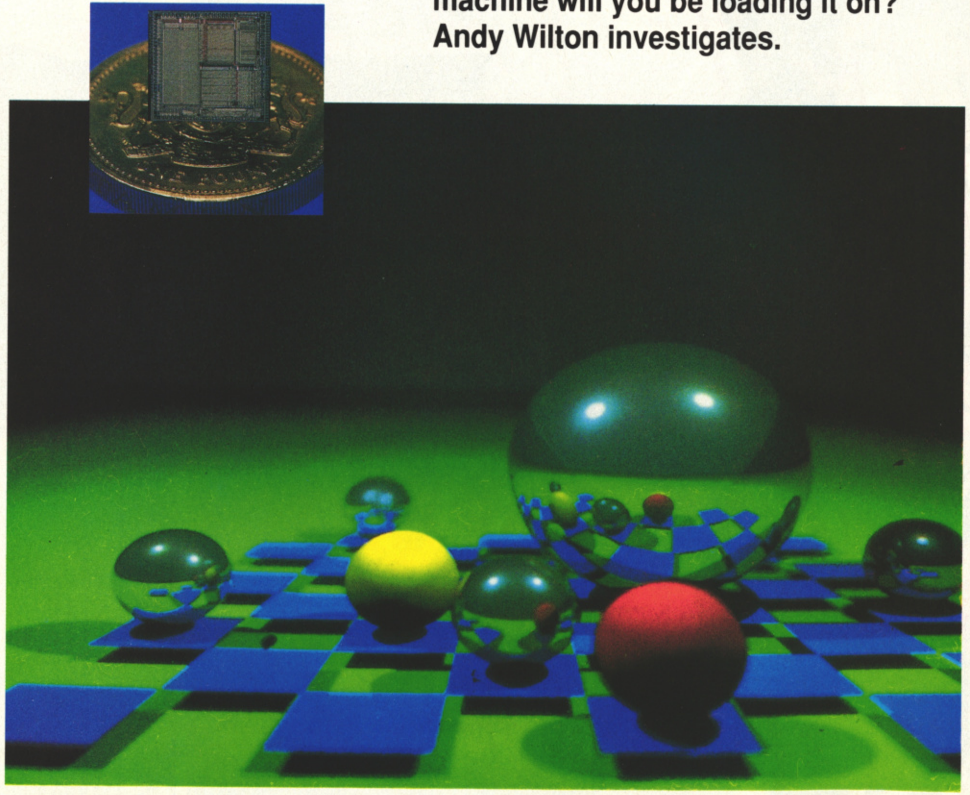
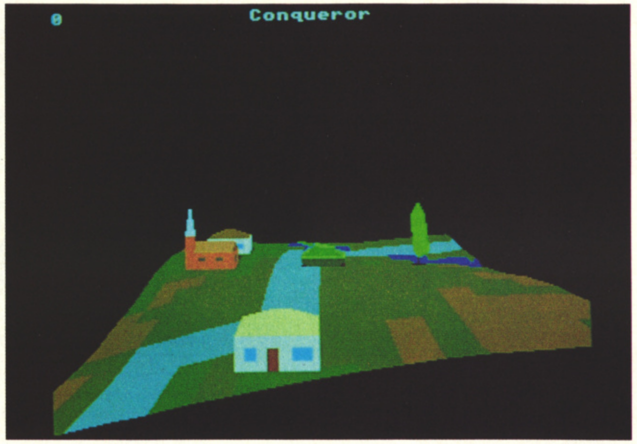
GAME OF THE FUTURE

It's Xmas 1992, and you're loading up the brand new game some kind soul's just given you. But what kind of game will it be? What sort of machine will you be loading it on? Andy Wilton investigates.



Vision of the future

Check out the stunning graphics on this Transputer ray-tracing demo. Ray tracing's need for thousands of separate calculations suits the divide-and-conquer approach of Inmos' parallel processing chip. How long before we see this kind of thing in real time? (Inset) The T414, the chip that makes it all possible, with a pound coin for scale.



8-bit machines need not apply

Jonathan Griffiths's innominate tank warfare game uses the 'patchwork' landscape routines of *Zarch* to bring you blitzkrieg on the Archimedes. The power required to handle the display in this case may even be beyond the capacity of the ST. A good example of how increased machine power can make new game-styles possible.

A new generation of micros is already on the horizon: power micros, fast enough to run whole new types of game. Micros using the technology on these pages are still a long way away from the high street shops, but in five years' time you could be playing games on them. They'll be able to spread the work of running a game between many separate processors; they'll be able to display half a million of colours on screen at once; they'll be able to read vast games from compact discs. But will programmers be making use of all that power? Will noisy phone lines thwart dial-in arcade games? And could this mean the end of sprites as we know them?

Anything could happen...

...in the next five years. Five years ago the Spectrum was brand new, and showed every sign of wiping out the year-old Commodore VIC 20 – a rather lightweight precursor of the C64 with only 3K of memory as standard. At £125 for the 16K model and only £175 for one with a massive 48K the Spectrum was the ST of its age: it delivered more bangs per buck, and quite a lot more at that.

On the horizon at the time was the Acorn Electron, a cut-down BBC micro that promised to be graphically superior to the Spectrum. It was, as it turned out, but its high price, low power and late arrival were to prove its undoing.

The ballooning of memory sizes and the collapse in micro pricing broke games out of their coin-op cloned stagnation, making whole new game types possible. Software houses mushroomed, and the games scene we know today started to take shape.

Parallel processing

Micro power is about processor speed and memory speed. There's a limit to the rate you can get a conventional one-processor micro to run at. Technical advances may have brought us newer, faster processors and memory chips but the boffins can't keep this up indefinitely. Beyond a certain point, the only way to get a computing job done faster – whether it's moving a sprite, filling a shape or creating a sound waveform – is to spread the effort between two or more processors.

This sharing of the workload is technically known as *parallel processing*, and it's already a well-established principle in the lofty realms of supercomputing. The multi-ton monsters of the world's research establishments can tackle vast number-crunching

The use and abuse of power

If the power of the ST's 68000 or the Amiga's blitter are revolutionising games this Xmas, we can expect even better things of home micros around (say) Xmas 1990. Already with games like *3D Galax* and *Carrier Command* the 68000 is producing unbelievable solid 3D graphics at high speed, and it's still early days yet. With the far greater power around the corner, what other game techniques might become viable?

Ray Tracing

At present confined to still pictures and short animated sequences on the ST and Amiga, this slow painstaking process involves following rays of light back from the objects in a scene to the imaginary source of light illuminating them. Ray-tracing a scene involves an enormous amount of work, and existing ray-traced animations are no more than 'slide shows' displaying previously calculated frames. The classic Amiga *Juggler* demo took over an hour per frame in calculation time, and even Tim Moore's high speed ST ray-tracing system took 12 minutes to produce the frame shown here.

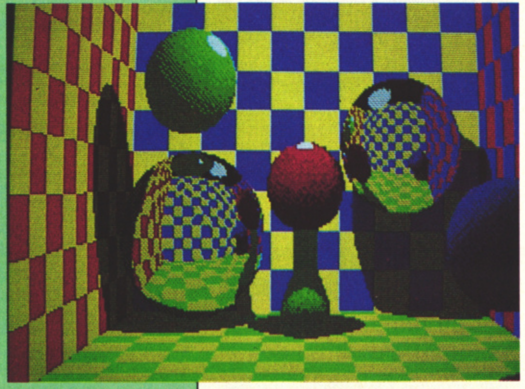
Ray-tracing can produce frames of immense complexity and realism, depicting shadows, mirrored surfaces and transparent objects with breathtaking accuracy. Because the technique's so slow it'll be a long time before a home micro can use it at anything like arcade game speed, but compromise methods should be able to offer many of ray-tracing's advantages in the forseeable future. As Pete Cooke proved with his smash hit game *Tau Ceti*, clever lighting techniques can add a great deal to game realism without slowing things down too much.

Otherwise, the real thing could still prove practicable and space-saving for graphic adventures, as well as static-ish games in the *Sentinel* or *Driller* mould.

Fractals

They may seem like yesterday's hot piece of games technology, but with more powerful home micros on the way fractals could go far beyond anything that *Rescue on Fractalus* or *The Eidolon* had to offer. The power of these exotic mathematical oddities to give surfaces a natural, realistic texture has long attracted programmers to them but there's an enormous burden of number-crunching involved. As a result most existing home micros lack the power to handle fractals effectively at arcade speed, and since the Lucasfilm efforts there's been a conspicuous lack of interest in them for games purposes.

Fractals deserve a good deal more attention than this, now that high-power micros are on the way in. They can texture anything from snowflakes to mountains, offering fascinating possibilities for shoot-em-up landscapes and similar: imagine *Zarch* with realistic hills and crags!



ST ray-tracing demo by Tim Moore.

problems by putting thousands of processors to work on them simultaneously.

Even if you don't have £10 million for one of Seymour Cray's little beauties, you can still get on the bandwagon. For starters, the (comparatively) humble Amiga has a limited parallel processing capability: with 1 megabyte or more of memory, you can get its 68000 central processor doing one job while its blitter – effectively a graphics processor in its own right – gets on with another. By this time next year however, ST owners will be able to do a sight better than that.

ABAQ

Due for launch in the first half of 1988, the forthcoming **Atari/Perihelion ABAQ** workstation will offer major-league parallel processing power that plugs straight in the back of your ST. The project's based around the **T800 Transputer**, a chip that has (along with its little brother the T414) been quietly taking the computer world by storm over the last two years or so.

Like Acorn's ARM – the powerhouse of their Archimedes micro – the T800 is a British design, hailing from West country chip magnates Inmos. Also like the ARM, it's a 32-bit chip. Indeed, you could be forgiven for thinking that the idea of plugging a T800 into an ST is very like Acorn's plug-in second processors for the BBC micro, in a sense a very early example of parallel processing on a home micro: but there are some big differences.

For a start, the T800 add-on won't just get your ST thinking faster: it'll give you vastly better graphics from it's own onboard video chips, and manipulate these at incredible speeds. In truth it isn't really an add-on for the ST at all, but a high performance computer that relies on the ST only for keyboard input and disk storage.

The second big difference is down to the T800 itself. From the outset the Transputer family were designed as parallel processing chips, making them quite unlike anything else around. Each one of them is almost an entire computer on one chip, complete with 2K or 4K of RAM already built in. Linking them together is childsplay: Inmos have built a multi-player combat helicopter simulator that lets four or more armchair pilots fly

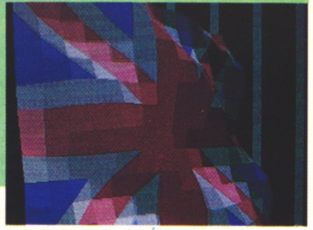
Speed vs. screen size

Machine power is on the increase the whole time, but so is screen size. 'Size' here means the amount of room the screen takes up in memory, and that's a very important factor in games performance.

Computer art packages and machine sales brochures describe the screen in terms of the resolution (320x200 or whatever) and the number of colours available simultaneously. Both of these have been rising continuously over the last five years, and the rises have pushed up the amount of screen memory required. For example, the Amstrad CPC needs 16K for a screen of 160 dots x 200 lines in 16 colours, while a 32-colour 320x200 Amiga screen takes up a hefty 40K of RAM.

In broad terms the more memory a screen takes up, the more power you need to run the same game on it. That's why Amstrad games typically run slower than their Spectrum counterparts: the machines are just about equal on power, but the Amstrad's screen is at least twice as big. With ever larger game screens – the 256-colour 320x256 Archimedes effort used on *Zarch* takes up 80K, probably the biggest yet – micro power has to carry on rising just to keep games running at current speeds!

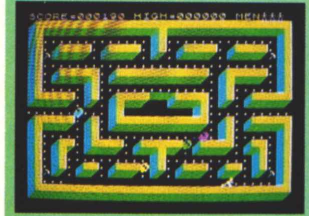
This vicious circle isn't nearly as bad as it sounds. Micro power is rising a good deal faster than screen size at the moment, with the Amiga and the Archie both capable of handling software sprites the size of the entire screen in typical games display modes. Quick game of *Space Harrer*, anyone?



Like the Transputer, Acorn's ARM chip is flying the flag for Britain, here in 256 colours.

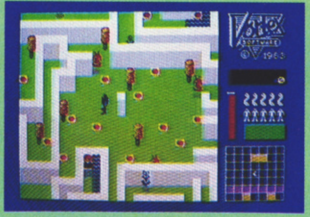
Dynamic Universes

See how software for the machine of the moment five years ago (the Sinclair Spectrum) has matured in the quest for the dynamic universe - a real world encapsulated in your micro. And if this is what we can get out of an eight-bit machine, what will the next five years squeeze out of STs and Amigas?



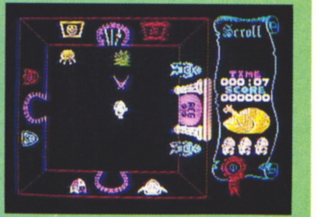
1 What you see is...

...what you get in *Haunted Hedges*: The closest this early Spectrum game gets to realism is that 3D effect on the walls. Your 'dynamic universe' is a pitiful single screenful.



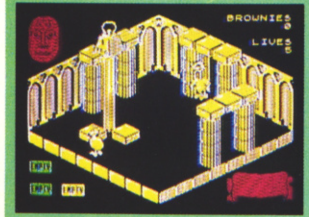
2 Going places...

Android Two: Costa Panayi of Vortex was ahead of his time with this one. 3D landscaping has improved, and now you can scroll in all directions to explore the game world further.



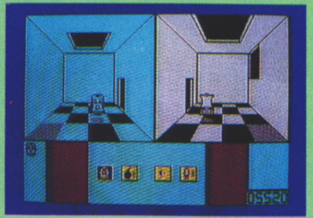
3 The jig-saw approach

Atic Atac: Ultimate take the opposite approach - there's no scrolling here, but they've packed a whole mappable mansion into your micro.



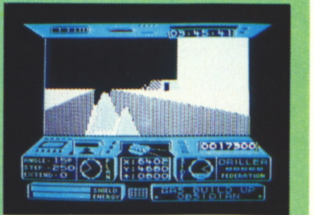
4 Isometric exercises

Sweevo's World: Gargoyle enlarge on the 3D room-by-room style of *Atic Atac's* successor, *Knight Lore*. The same bits-and-pieces approach as before, but it's looking much better.



5 New perspective

De-activators: Ariolasoft go for true 3D perspective here, with droids appearing larger as they get nearer the camera. It's still room-by-room, but we're almost there...



6 A world is born

Driller: The Freescape system from Incentive brings a planet to life. Whether they can squeeze any more blood out of the Spectrum stone is anybody's guess.

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around the same solid 3D landscape, firing at each other if they wish, and uses 11 Transputers per player. It only took two man-weeks to program, presumably because there was no need to get clever with that much power available!

The biggest drawback of Transputer technology at the moment is the price. Where Acorn's add-ons have mostly been within reach of the home enthusiast, the Atari/Perihelion box plus software will probably be around the £3000 mark. Put that together with the price of an ST (and it may have to be a pricey Mega ST at that) and you've got a bill that makes the Archimedes look very cheap.

The Atari/Perihelion Transputer box will be an impressive beast. It'll have a 20MHz T800, a 20MHz 32-bit Blitter for graphics operations (should be around ten times the speed of the Amiga's) and – the real point of all this – its own picture output. Throw your old monitor in the bin folks, because this one will be able to turn out a 1024x768 screen in 256 colours, or a 512x480 one in around half a million of them.

The box is intended as a workstation so that kind of graphic output isn't actually way over the top. Whether a future T800 micro would have graphics on the same lines is anyone's guess, but the point is this: between them, the T800 and the Blitter can handle a screen that size. With 'titchy' screens like the ones an Amiga or Archie uses, the dynamic duo could surely perform staggering feats.

The question is, are Atari planning a Transputer-based home micro in the forseeable future? Opinions differ: many see ABAQ as the start of just such a project, with a finished machine coming out in around three years time. Sceptics like *Starglider* author Jez San point to the high price of the Transputers themselves- even after a recent price cut T414s still cost £180 each – and the fast RAM they need, but the optimists won't be discouraged. Transputer prices would tumble with the mass production an Atari machine would need, they argue, and chip prices generally are falling all the time.

In practice

It's no good having all that power to hand if games programmers aren't using it, of course. Amiga and ST programmers aren't pushing their machines at all, with many games still partially written in high-level languages such as C. This makes them considerably slower than they need to be – the sluggishness of so many ST and Amiga games is often attributed, rightly or wrongly, to a high C content – but it has its advantages as far as the programmer and the software house are concerned.

For programmers, languages like C can make life a good deal easier, and cut down writing time. For software houses it makes their games more portable, cutting down on the time needed to convert from one machine to another.

To an extent this is just a phase the 16-bit market's going through. Early Spectrum games often contained large chunks of Basic and '100% machine code' was a proud boast in adverts of the time, where nowadays it's taken for granted on all 8-bit machines. The 16-bit C-monsters can't match the speed of the machine code opposition so they're starting to die out, but such games may well find a safer niche on high-power micros.

The problem is mostly that, with the enormous increase in speed they offer, power micros will let a programmer get away with using C. As *Zarch* author David Braben pointed out, 'On the Archimedes you could even write a marketable game in Basic. It's going to take a lot longer before high-level languages are dropped on ARM or Transputer micros.'

Transputers present machine code programmers with additional obstacles. Using networks of Transputers can be very tough going indeed at such a low level. Inmos themselves strongly recommend the use of the parallel processing language Occam instead, and the signs are that most programmers will toe the line on that one. 'The chip's designed to be programmed in Occam,' Arcadia programmer Andy Walker said. 'It'd be worth the slight loss of speed to get proper parallel processing.'

Sprite send-off?

Not only will programming techniques have to be re-evaluated, so will the on-screen presentation of the games you play. With machine power and screen size on the way up conventional 'bit dump' (that is, sprite-based) games start to look less attractive than at present. If your machine can handle a sprite larger than the entire screen (see 'Power and Screen Size') a game's going to have to do just that to actually impress anyone. The bit-dump games of today just won't show off the power micros' capabilities. Furthermore, if you're writing a game for a micro with a 1Meg screen you'll have a tough time fitting your sprites and background onto a conventional disk. (A CD could manage it though – see separate box.)

On the other hand, the new chips will be able to handle the calculations and area-filling of realistic 3D games far better than current machines can. Higher resolution displays will also suit 3D games very nicely, with fewer jagged eges and better definition on small objects. Given the prestige attaching to realistic 3D – no vectors title has ever been launched as a budget game, for example – such techniques should also fetch games a better price. Will sprites rise to the challenge, or just fall by the wayside? 'I don't think sprite games will ever die out,' said ST programmer Tim Moore, 'but they'll certainly take a beating. 3D games are a lot harder to write though — there's a lot more to go wrong.'

The added power of 16-bit technology will not only bring us products with more punch, it will also change the nature of the games themselves. Certain types of game (strategy and war-gaming, for example) have never really caught on with the mass-market, simply because 8-bit machines didn't have the power to do justice to the computation involved. Suddenly whole new categories of game are getting ready to come out of the closet – take a look at Rainbird's Universal Military Simulator, reviewed in this issue – games that really do bring us one step closer to building a complete 'game-universe' inside a computer. Fasten your seatbelt and prepare for take-off...

CD capers

Two or three years ago, the future looked CD-shaped. Laserdisc coin-ops like *Mach III* and *Dragon's Lair* heralded a new era of TV-quality graphics you could interact with. Well, that's the way it looked, anyhow.

Compact discs are undoubtedly wonderful things and could have a lot to offer the games-player of the future. Their enormous capacity for data – over 500Meg (that's 500,000K) on one disc – makes them naturals for home computer use. CDs would be great for distribution of bulky games be they graphic adventures, big-sprite classics or whatever.

As for *Dragon's Lair* -style interactive video, it's hard to see how this can ever match the level of player involvement most games players have come to expect. Several software houses have interactive video projects under development, but the gameplay problem isn't going away. 'Interactive video games like *Dragon's Lair* are something of a dead end — a cop-out,' opined David Braben (he of *Elite* and *Zarch* fame). 'They only have a simple tree structure which gives the player very little to do. The way to get TV quality graphics and gameplay together is by sheer processing power — but that's looking in the very long term.' (Cf. the White Wizard's views on multiple choice adventures in ACE 3.)

On-line low-down

Adventures down the phone line are nothing new, but how about online arcade games? You can already play things like *Flight Simulator II* or Doctor Soft's *Double Phantom* with a friend, your plane being visible on his micro and his on yours. If he's sitting in the same room as you it'll just take a connecting cable, but if he's on the other side of town (or the world!) then a modem each will have the two of you hooked up courtesy of the phone company. That's still some way short of the interaction you get in a decent multi-user (adventure) game, but there's no real reason for this gap. A system where half a dozen players from across the country could join in one game of an *Elite*- or *Gauntlet*-style game should be possible – provided, that is, there was enough money to make it worth the programmers' while – but there would be problems.

The bottleneck is the actual phone connection: with the poor quality of existing BT lines, it's a tough task cramming the information into them fast enough. To get a smooth game your micro has to tell the central system what you're doing, and find out what everyone else is up to, 25 or even 50 times a second. That's a tall order on today's phone network, though there's some promise that BT's new System X will make higher data speeds a sight more reliable.

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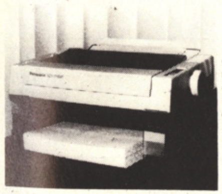

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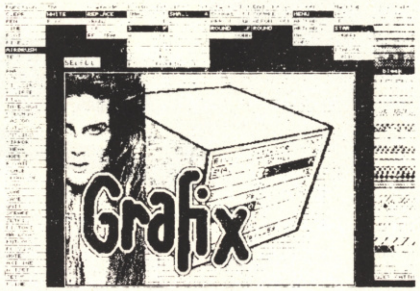

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Is there anything new that you would like to see included in future issues of ACE?

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1. The competition is open to all residents of the United Kingdom and the Republic of Ireland except for employees of Future Publishing Ltd and Casio Electronics Company Ltd. 2. Only one entry per person is allowed. 3. The winner of the DG20 guitar will be the sender of the first correct entry indicating the appropriate choice of prize and selected at random by the judges after the closing date. 4. The winner of of the MT600 keyboard will be the sender of the first correct entry indicating the appropriate choice of prize and selected at random by the judges after the closing date. 5. The results of the competition will be printed in the March issue of Advanced Computer Entertainment, due on sale on Thursday, 11th February 1988. 6. All entries must be received by first post on Friday January 8th 1988. 7. The decision of the judges is final and no correspondence can be entered into.

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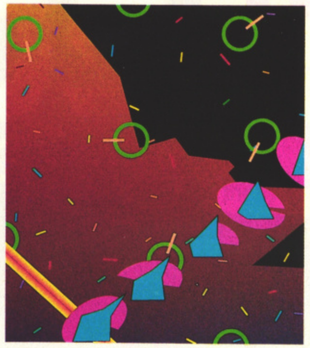
COMPUTER GRAPHICS 87

Next time you're trying to do some animated 3D on your ZX81, you might like to think about what you could create if you could only save enough money for a *really* powerful machine – something costing a mere 20 or 30K, perhaps. Computer Graphics 87 displayed the Ferraris and the Lamborghinis of the graphics world. Chris Jenkins went along for ACE; he didn't have enough cash to buy anything, but he did bring back this report.



Mozart – business presentation graphics created using Dicomed's £52, 000 Producer XP graphics workstation

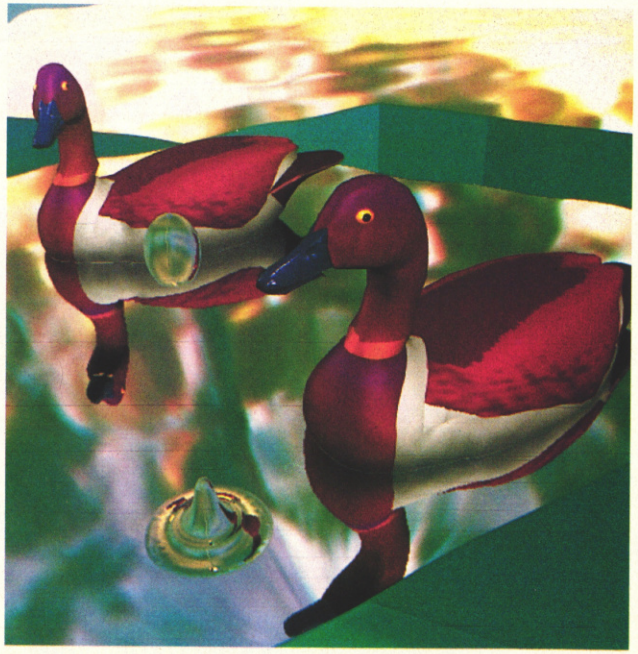
There's no doubt that good graphics sell computers; how how many Atari ST's and Amigas have been sold on the strength of such famous demos as Shiny Bubbles or the Juggler?

Spending £50,000 on a computer for its graphics capabilities alone is another thing altogether – yet that's what the exhibitors at the October Computer Graphics '87 Show at London's Wembley Conference Centre were trying to convince visitors to do.

The eighth show of its kind, CG'87 included a festival of computer-animated films, a series of very high-brow conferences, and displays from almost 150 companies involved in the very big business of making computers make pictures. The results were mind-boggling; a flood of images, some just about within the capabilities of high-end home computers, others so realistic that it was hard to believe they were rows of pixels and not the real thing.

The show covered four main areas; imaging, business graphics, pure design and animation. Imaging is the jargon for the transfer of computer images to other formats; obviously, however striking your picture, it's not doing you mucy good sitting on a computer unless it's intended purely for use in a game. Hardware such as digital still cameras, movie cameras, multi-colour plotters and laser printers was on show at prices to make your eyes water.

Even more expensive were the graphics systems themselves. At the low end, IBM PC-compatible software systems such as those from Dicomed and Genigraphics can produce a huge range of charts, graphs and diagrams using a simple data entry routine. The results can be polished up with different text fonts, selectons of colours and background effects, to produce a slide or overhead projector image which should help convince the manging director that you really do deserve that raise.



Animated graphics from *Access* ad, by Digital Pictures.

Amiga Workstations

You can also put together an impressive graphics workstation using a Commodore Amiga 2000, with an additional maths co-processor chip, hard disk and plotting tablet. The Scottish Amiga Centre showed a system working out at around £8000 which produced some impressive work using software packages such as *Sculpt-3D* and *Forms in Flight*. Remember that in this world, £8,000 is considered a bargain-basement price.

The Amiga's 4096-colour palette and 640x400 pixel resolution is certainly impressive compared to most eight-bit computers.

Computer animation matted with live action in the Paramount TV series *Automan*

The real heavyweights in the graphics world, though, boast palettes of over sixteen *million* colours, and resolutions up to eight thousand lines.

The heavyweights...

Many of these are used for technical applications such as CAD (computer-aided design), or graphical analysis of geographical, meteorogical or metallurgical data. The same systems, with different software and peripherals, can also be used to produce pictures which no paint-and-paper artist could ever hope to create.

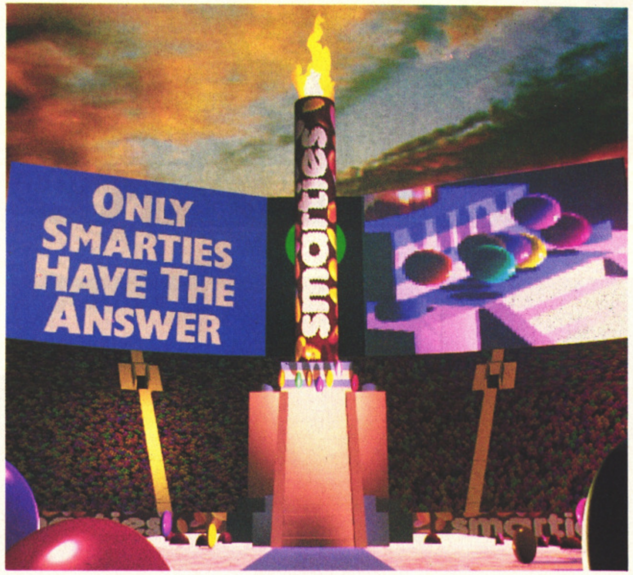
Letraset's llustrator system, for instance, uses a 1024x768 pixel display and a palette of 248 colours from a choice of 16.7 million. You can either create a picture from scratch, or feed in a scanned photograph, or a video image, and rework it.

Illustrator features all the controls you would expect to find on a home computer paint package; polygons, solids, lines, brush shapes, airbrushes, flips, zooms, rotates and so forth. The finished picture can be output to film, colour printers, or video.

Really powerful systems like the Dicomed Producer XP make Illustrator look like ZX80. This £52,000 system has 46 Mb of data storage on hard disc, and a maximum output resolution of 8000 lines. No wonder some Dicomed images look so real that you want to reach out and touch them.

...and super-heavyweights

So far we've been talking about sytems with mere telephone-number prices. The next step up are the intercontinental telephone number machines, often over half a million pounds, which produce the sort of images which you see every day on television.



Smarties ad , by Digital Pictures; more computer animation

Perhaps the most impressive source of animated computer graphics is Digital Pictures, who are responsible for the ITN News and Opportunity Knocks title sequences, and Smarties, Access and Yoplait adverts – these represent the most sophisticated computer graphics commercially available.

A typical Digital Pictures production begins with plans or solid models being converted to digital form using sophisticsted scanners. Some objects such as mountainous backgrounds can also be created "procedurally", using techniques such as fractals.

The results are stored in a Data General MV10000SX mainframe, then transferred to an IRIS 2400 realtime animation suite. The animation is set up using a wire frame representation of the various objects to be incorporated. These are manipulated with cursors to control the animation speed and direction. Key frames are defined, and the inbetween frames automatically generated by the computer.

When the animation has been planned, the information is transferred to a "frame Store" where the details of colour and lighting can be added, using techniques such as the deligtfully-named "Phong Shading" which realistically represents smooth reflective objects.

Ramtek say that their 4322 graphics display system ' offers high performance for low cost' – they mean it costs less than £15K

Techniques such as "texture mapping" allow video, computer or painted images to be incorporated into the animation, and other properties such as subtle texturing, transparency and translucency can be simulated too.

The whole animation can then be downloaded into a video editing system such as Quantel Paintbox, or incorporated with live action, before the finished piece is transferred to video, or to film at 2000 line resolution.

The results are simply staggering, as you can see for yourself from the graphics shown here. The cost, though, is equally staggering, so what can the budding computer artist hope to achieve with affordable equipment?

What's in it for you?

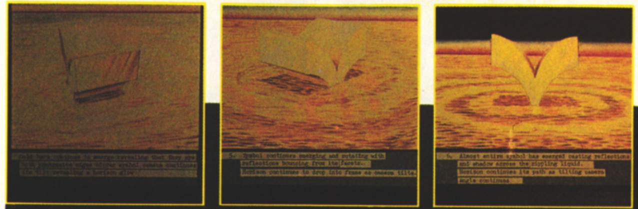
While the Atari ST and Commodore Amiga can already produce impressive results using software such as *Aegis Animator*, and hardware video genlock systems, the next wave of home computers will be even more impressive graphically.

Already, Acorn's £800 Archimedes is creating a stir with its Reduced Instruction Set Computing (RISC), which enable sophisticated graphics to be animated better than ever before on a home computer. Atari, too, is planning a transputer sytem which boasts resolutions from 1280 x 960 in four colours, to 512 x 480 with 16 million colours available. Again the processing speed will be such that animation and video interfacing capabilities should be impressive.

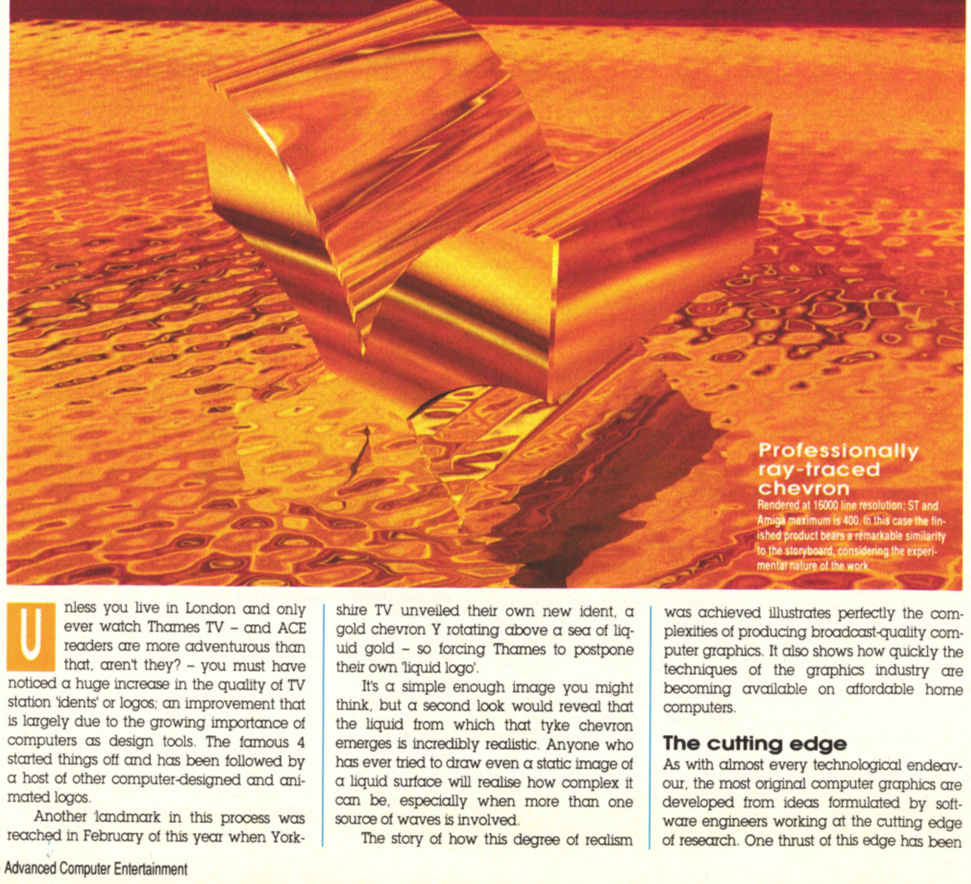
Techniques developed on the extremely expensive workstations used now will inevitably be avialable to the home user when the price of the tecnology comes down – as it inevitably will. So next time you see a stunning computer animation on TV, reflect that this time next year you might even be able to do the same thing yourself. ●

THE GOLD STANDARD

Some of the most advanced computer graphics you're likely to see is when you watch the old telly; adverts and, in particular, the station logos take the technology to its very limits. Brian Larkman brings you the story of how one such logo – the Yorkshire TV gold chevron – struggled in to existence.


5. Symbol continues emerging and rotating with reflections bouncing from its facets.
Horizon continues to drop into frame as camera tilts.
6. Almost entire symbol has emerged casting reflections and shadow across the rippling liquid.
Horizon continues its path as tilting camera angle continues.

Storyboard
To maintain a reasonable degree of artistic and technical control of an animation sequence a storyboard must be constructed. This is as important for a Film Director or Deluxe Video sequence on a PC as it is for a £1million advert or a £30 million movie. Each stage of the action must be portrayed in some detail; in an amateur production changes can be made 'on the hoof', but professionals usually know exactly what they want and how it should be done



Professionally ray-traced chevron
Rendered at 16000 line resolution; ST and Amiga maximum is 400. In this case the finished product bears a remarkable similarity to the storyboard, considering the experimental nature of the work.

Unless you live in London and only ever watch Thames TV – and ACE readers are more adventurous than that, aren't they? – you must have noticed a huge increase in the quality of TV station 'idents' or logos; an improvement that is largely due to the growing importance of computers as design tools. The famous 4 started things off and has been followed by a host of other computer-designed and animated logos.

Another landmark in this process was reached in February of this year when Yorkshire TV unveiled their own new ident, a gold chevron Y rotating above a sea of liquid gold – so forcing Thames to postpone their own 'liquid logo'.

It's a simple enough image you might think, but a second look would reveal that the liquid from which that tyke chevron emerges is incredibly realistic. Anyone who has ever tried to draw even a static image of a liquid surface will realise how complex it can be, especially when more than one source of waves is involved.

The story of how this degree of realism was achieved illustrates perfectly the complexities of producing broadcast-quality computer graphics. It also shows how quickly the techniques of the graphics industry are becoming available on affordable home computers.

The cutting edge

As with almost every technological endeavour, the most original computer graphics are developed from ideas formulated by software engineers working at the cutting edge of research. One thrust of this edge has been

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in the realistic portrayal of liquid surfaces. Stuart McEwen, software designer at the YTV logo producers Electric Image, has evolved algorithms to simulate extremely complex liquid surface movements; yet despite all his work it took a coincidence to fully 'realise' his ideas for TV.

Charged with the responsibility of devising a new ident for YTV, Jeff Parr – head of promotional graphics for the company – was ambitious; 'I wanted to do something impossible', he says; and McEwan seemed to be the man for the job. Discussing the various impossibilites with Electric Image the idea of a moving liquid surface seemed the most likely. The next step in realising such an idea was the production of a series of storyboards.

The illustrations show the ones that were approved by the YTV management. They show the various stages of the animation: the emergence of the glistening gold chevron from the liquid gold; the surface uncannily like the final image when you consider the software was not yet written; the solid yellow Y rotating against a black background. Next came the difficult bit.

TOMORROW'S WORLD

The *Tomorrow's World* logo: tomorrow's computer graphics – today

BT – all those phone bills pay for some nifty graphics

TV station Identity Symbol

For a variety of reasons, the production of station logos – idents – has become the testing ground for new computer graphics techniques. TV companies are not shy of spending cash in competition for both viewers and advertisers , so the prestige of a successful logo is important. TV companies are also in collaboration with the advertising industry; its financial clout and technical expertise in ramming home a visual message are readily available. Flashy idents that are more than just corporate symbols are therefore almost inevitable.

Simulating software

Having said that he could do the impossible Stuart McEwan now had to write the software to set up the simulation. This was to involve the first commercial use in Europe of liquid simulation with Ray Tracing – but using the same basic principles as are available to Amiga owners from *Sculpt 3D*. Although the groundwork had already been done by other people, it was still necessary to study several books on oceanography in order to devise the algorithms that accurately reproduced the movement of a liquid when acted upon by arrange of forces, including wind and tide. For example, one source of waves produces a straight line or concentric rings; two sources give interference patterns; more than two and the picture becomes very complex.

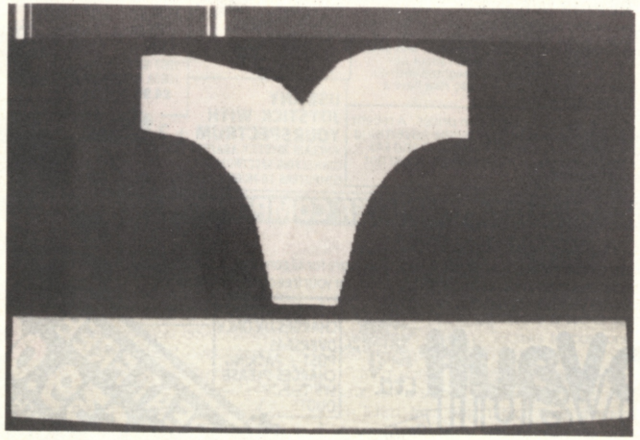
Three months of working day and night and the simulation was complete; but although it was technically correct the surface movement still lacked a certain something that McEwan could not quite get right.. weeks of frustrating work did not provide an answer. In the end the finishing touch was provided by Jeff Parr; after a few hours sketching the water movements from his hotel room overlooking St. Katharine's Dock in London the intuitive clue was found.

With the insight that these sketches provided McEwan was able to perfect the animation, a fine example of the value of collaboration between software designers and graphic artists.

A system called Doris

A still from the final sequence can be seen on the previous page. Electric Image use a system they call DORIS. It consists of a VAX11/780 connected by Econet to four Silicon Graphics IRIS workstations and a Gould POWERNODE frame-buffer developed by Rediffusion for their flight simulators. Altogether, a pretty powerful system costing several hundred thousand pounds. Nevertheless, the final image shown above took over an hour to render (paint) – though it IS produced at an incredible 16, 000 line resolution.

The final sequence, rendered at lower resolution, took 23 minutes per frame. This compares to about 30 hours for the mockup of the YTV chevron produced using Sculpt 3D. In spite of this it is still quite amazing that Ray Tracing should be available at all for a home computer. If you have the time – approximately 16 days per second of animation time – it is even possible to make an animated sequence. With any luck *Animate 3D* – by *Sculpt3D* author Eric Graham – will cut this time down a bit and make animating a ray-traced sequence rather easier. Your results will be poor compared to DORIS's – but then she cost 1500 times the price of an Amiga! ●



Amiga ray-traced chevron

Produced with *Sculpt 3D*. Obviously much lower resolution but the reflective effect is still quite dramatic. The most obvious clue to the difference is the clear aliasing (jagging) and the less pleasing reflections. After a week of trying to get this effect with the Mirror Texture option it became obvious that Shiny actually was the correct choice. As each full ray trace takes about 20 hours it can take some time to detect such errors. The pro version uses sophisticated specular reflection algorithms not available from *Sculpt*.

NEXT MONTH

Next month we promise – cross our hearts and hope to die – that we'll be bringing you a selection of readers' artworks; pressure of space in this Christmas issue meant that we had to hold over those exciting pictures. And if you don't think you're in a fit state to be showing your work around at the moment, don't worry – we'll also be starting our How To Do It series on computer graphics; could you be the next Leonardo? You won't know unless you try; so don't miss the next ACE!

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Screen Scene

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After a weekend in which I watched my beloved QPR rise to the top of Division One, what more could I want than a good whirl at a football game — wrenching *Football Director* from a disillusioned Mike Pattenden's hands I was off. *Football Director* is the first offering I've seen from this soccer crazed software house in Stevenage, so it was with a certain degree of curiosity that I cast my eye over this.

The packaging was the first thing to catch my eye, it seems to bear a very strange likeness to Imagine's *Super Soccer*, still ... mustn't grumble. Whilst loading up the game I thought I'd have a customary read of the instructions only to find there weren't any, nothing other than an extensive list of the game's features, and a guide to the prices you can expect to pay for players.

When you have chosen your team (QPR-naturally) you may than either change any other team names (try 'Q.P.R.' to 'Donkey' — *Ed*.) and then on to the main menu. The game is controlled by pressing the initial letter of the option you wish to use. The options are:

Play Match: get stuck in there, the moment of truth. Can your boys in the league do what they did in training? Only choose this when you are satisfied you have selected your strongest squad, as once you've kicked off you cannot make any other changes for ninety minutes. The match is shown with the two teams names written on screen, and the clock ticks away (a match takes ninety seconds). When someone scores, the goal and the scorer are shown under the team.

After your match is finished the other results from your division are shown, and then your wage bill and weekly news. The weekly news tells you if you made or lost money this week, if any players are injured, and even bills you if there was any crowd trouble.

Check match: This option allows you to size up your opponents, it tells you their league position, their formation, and the skill of their goalkeeper, defence, midfield, and attack, so you can adjust your squad in order to wallop them!

Fixtures: This shows you a table of your previous results and the matches you have left to play in your thirty-eight game season.

Extra training. This option allows you to give extra training to either the goalkeeper, defence, midfield, or the attackers. This is in order to improve their skills. You can train them for any length of time between one to nine hours, but don't give them too long as they may slack or even get injured.

Transfer Market: As you are given only half a million pounds to begin with you ought to be very careful at the transfer market as the striker you buy could have excellent potential. Then again he could be the next Alan Smith! Each player has a certain amount of skill between one and nine. You can expect to pay any thing between £10,000 and £100,000 for a player and the inlay does give you a key to help yourself make successful bids.

Injuries/Goals: This gives you a run down of who is injured, how many goals have been scored, and how many the 'keeper has conceded in your squad.

Bank: As in life itself you can obtain a company loan, but as in life itself it is a very small one with a very large rate of interest. You can also obtain a mortgage should you wish to build a new stand.

Gamble: This tempting option allows you to bet that your team will win the league title, F.A. or League (Littlewoods) Cup, or for the less extravagant of you just to simply gain promotion. You can bet anything up to £100,000.

Employees: At this option you can hire a coach, physio, and a team scout all of which are fairly necessary. You can also hire a youth team manager which at £2000 a week may seem rather expensive, but every so often a promising young lad qualifies to the ranks of the big boys.

Shares: Every football director is a bit of a capitalist — some more than others (Yes, you Mr Bulstrode!) Watch your share prices rise and fall, and decide when to sell or buy, but take my advice don't sell to Marler Estates!

Insure: I like this. Should any of your players get injured, and you have taken out a policy, you're in the readies for a while.

Build Stand: Why not do just that? Naturally it costs.

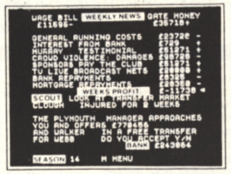
Postponements: Simply tells you if there are any.

Level: This is a nasty one. There are three levels easy normal, and hard. With normal you can choose which level you wish to start on, but the nasty evil, wicked, twisted, programming team have been extremely cunning and taught the computer to put you up a level if you are playing too well, and won't allow you to turn it down. I don't wish to sound like a wimp with sour grapes but this is indeed a bitch! If you are bottom of the league and getting thoroughly beaten then you are permitted to continue getting slaughtered on easy level. But then should you start playing half decently it's on to the next level you go which means you'll fly down to the bottom of the league. I've had words with the programmer and I am informed that you must have the perfect blend of players for each division, not too good to be moved up a level and not useless so they don't lose even on level one, all I know is I haven't found the correct formula!

Football Director is an extremely competent simulation/football strategy game. It has the correct blend of speed, realism, and playability not to be found on any other game of this type since *Football Manager* (which I confess I am thoroughly sick off) and for this reason if it is better than the old Addictive classic.

It is a rather tricky game but sheer patience will soon overcome this. The 64 needs good football games like Bristol City need good players (*Oi! — Ed*.) and this is one.

Ferdy Hamilton



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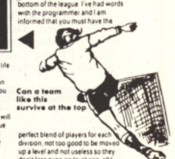


Can a team like this survive at the top

Graphics
Sound
Toughness
Endurance
Value

8 Overall

"COMMODORE USERS"
Review October Issue

FOOTBALL DIRECTOR

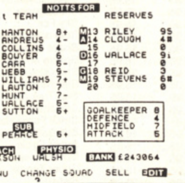
D&H/£8.95

Marcus Although most of the games industry has been cornered by the big companies with their vast marketing spends, advertising budgets and freebie lunches for Dr Berkmann (more, please!), there's one tiny sector that's still well under control of the independents — the footie management simulation. It's probably got much to do with the massive success of *Kevin Toms' Football Manager*, which has bobbed in and out of the charts for nigh on five years and is probably the best selling Speccy game ever. (Is it? I'd be interested to find out.)

The best of the current crop is D&H Games' *Football Director*, which is about to be made widely available after some time on mail order only. Written by De Salis and Huggard it's a no-frills sim which cuts out any unnecessary graphics and attempts at arcade action and sticks to what footie sim fans really want — pure strategy. The packaging's modest — a simple inlay card with the barest of instruction — but if you're interested in a game like this, you're going to know exactly what's required, and what you don't get immediately you'll pick up along the way.

Starting at the bottom of Div 4 (where else?) you must pick your team and battle through a full league programme without throwing all your money away. You can mortgage your club when the going gets tough (which it will) and also borrow dosh from the bank. There's a full timetable of League, FA Cup, League Cup and European matches. Players have skill points, which are influenced by morale, which is naturally decided by winning or not. Morale is surprisingly fragile. There are appalling hazards all along the way — injuries, sendings off, postponements, crowd violence, retirements, interest, tax, other managers trying to poach your players, even sackings. There are fixture lists, automatic updatings of the league, midweek games, the opportunity to buy or sell shares, international games, loads of transfers and even three skill levels. It makes *Football Manager* look like a tatty old Basic game. If you like this sort of thing (which I do), you'll love this.

If you have problems finding it in the shops, send £8.95 (cheque/PO) to D&H Games, 19 Melne Road, Stevenage, Herts SG2 8LL. Oh, and remember to save regularly — it has the occasional tendency to crash!



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YS CLAPOMETER

A definite Match Of The Day *for football fans. Low on action, but high on strategy. You'll be over the moon with this one!*

TOTAL 8

"YOUR SINCLAIR"
Review November Issue

"Don't take our word for it, take the word of the reviewers who like strategy games".

SPECTRUM £8.95 • COMMODORE £8.95 • AMSTRAD £8.95

This game also available by mail order at £8.95 per cassette. Send your cheque/P.O. made out to D & H Games plus a large SAE, with 25p stamp attached. Please write your name and address on reverse side of cheque. (72 hours delivery).

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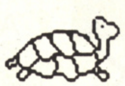

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ARCADE ACE

Fearless reporter Chris Jenkins strides in to the arcades to struggle with squidoids in the horrifyingly funny *Xenophobe*, then blasts heffalumps and vacuums a few ghouls in *Ghostbusters*

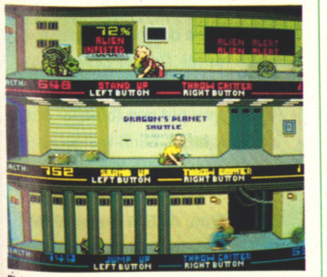
• XENOPHOBE

Bally Midway
20p per game

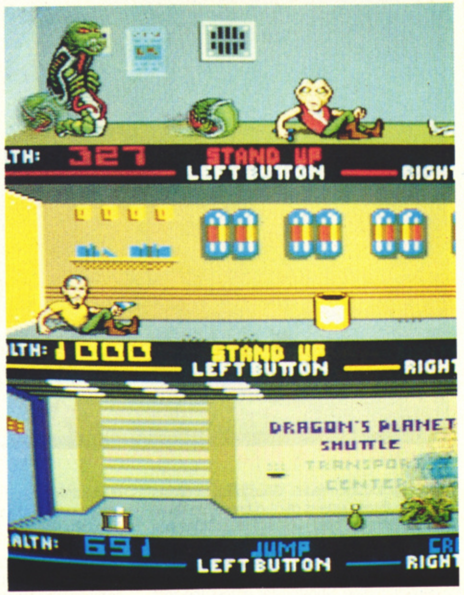
Xenophobe is so marvellous that I had to be dragged away from the screen screaming and kicking. Based very loosely indeed on the plot of the movie *Aliens*, it combines sublime cartoon-style graphics with non-stop action and black humour.

Each of the maximum of three players has a gun-grip with a trigger and two thumb-buttons. The screen is split into three strips to show each player's point of view. As the game progresses, the players can either stick together to protect each other – in which case the view in each strip is the same – or go their separate ways in to different areas of scenery.

The game is set on a space shuttle infested with the most revolting, slimy, aggressive mutant monsters you could imagine. The characters – blessed with with names such as Dr. Zordirz (geddit?) and Colonel Schikn – bear a marked resemblance to familiar faces from *Star Trek* and initially materialize in the transporter room of the shuttle.



Fighting off the squidoids



Cornered by the Xenos!

As you move through sets of sliding doors into the separate chambers, you will be attacked by a nauseating selection of monsters; scuttling squidoids which try to eat your legs, shell-like creatures which shoot forth strangling tentacles, ray-eyed mutants who melt your brain, and the horrifying, leaping slug-like Xenos themselves.

At each moment labels appear below the screen to show the current function of your two thumb-buttons. This can be to jump, crouch, throw off a monster, pick up a gun, throw a bomb, or use another object. The main trigger is always either Punch (if you have no gun) or Shoot (if you do). An infestation level display appears at regular intervals on the walls of the corridor.

While blasting your way through hordes of slimy mutants is all very well, you will need to use some strategy to clear the shuttle before it self-destructs; using floppy disks, chemicals and pass cards to gain control of the ship's defence system and wipe out aliens faster. Otherwise you will overrun and will be either gnawed to the bone or transported back to the ship when your time runs out.

Xenophobe is outrageously funny, with some real moments of horror as tentacles break through the ceiling, grab you by the throat and try to eat your face off. The accompanying sound effects leave little to the imagination, and the facial expressions of the characters as they meet each new horror are hilarious. Goodness knows how long it would take to master this game; so someone *please* produce a home micro version, before I spend *all* my money.

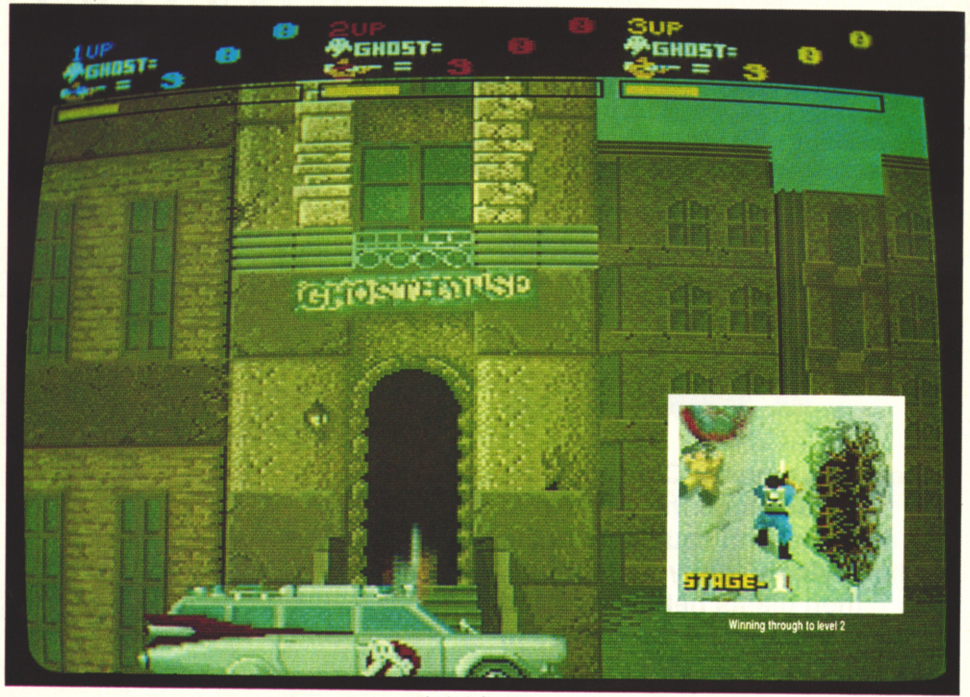
• GHOSTBUSTERS

Data East
20p per game

It's been a long time coming, but finally *Ghostbusters* has made it to the arcades. To be accurate, this is *The Real Ghostbusters*, based not on the film but on the American cartoon series, as yet unseen on this side of the Atlantic.

The good news is that the game is nothing like the Activision home computer title, which was well-received in its day but is only average by today's standards. The coin-op is a fast-moving shoot-em-up with plenty of laughs along the way.

Featuring convincingly synthesised music from the film, and a selection of ear-



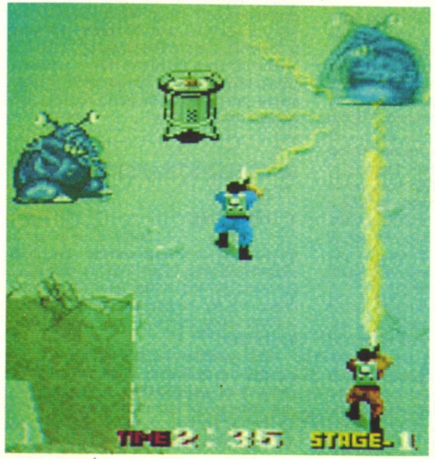
Winning through to level 2

Leaving the Ghosthouse

bending sound effects, *Ghostbusters* caters for up to three players at at a time. The three control handles and sets of fire buttons are arranged in a semi-circle, and extra players can join in at any stage of the game.

The rules are pretty simple; move your nicely-animated Ghostbuster across the roof tops, fighting your way through hordes of attacking monsters. If it moves blast it, and if it doesn't move, blast it anyway to be on the safe side. Your rapid-fire energy gun will blow away most of the ghoulies you encounter; you then use your sizzling beam weapon to vacuum up the resulting spectres in to your back pack. Go mad with either weapon, though, and your energy will fall to a fatally low level.

It's almost impossible to get through the early levels without a little teamplay; ideally, two players shooting monsters while the other vacuums them up. You'd have to take turns, of course, since the more ghosts you capture, the higher your score.



Blasting the heffalumps

The monsters are great; winged balloons with flickering tongues, elephantine blobs, and cowled and fire-hurling warlocks. To help you out there are several icons to pick up; a Ghostbuster logo to extend your firepower, a globe which gives you a temporary shield, a battery to boost your backpack power. Beware of the skull which appears when you kill certain monsters; this will dangerously drain your energy on contact

Many of the special bonus icons are surrounded by bobbing spikes. It takes precise timing to manoeuvre through these while fighting off attacks, but if you manage it you get the chance to capture the Green Ghost – a fast-moving spook which scores you a big bonus. Watch out, though, for the time limit on each level and your continuously falling energy reserves.

Ghostbusters is enormous fun; in many ways it's a noisier and flashier version of *Gauntlet*. While *Ghostbusters* doesn't have the maze element which made *Gauntlet* so compulsive – the next level is always accessed across the narrow footbridge at the top of the screen – there's the same sense of frantic action and the demand for co-operative play. Should be a hit – especially if the rumoured *Ghostbusters 2* movie really does make it to the screens. ●

FREE SOFTWARE!

Every month there's a fabulous software prize for the best arcade tip printed in Tricks 'n' Tactics. Last month Deano Schofield picked up a copy of *Starglider* in return for his *Double Dragon* tips; next month it could be you – but only if you put pen to paper and get scribbling. Send the goods – stating which computer you own – to:

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KEYBOARD CAVALCADE

..So you want to make music with your computer, and you know that the best way to do it is with a MIDI keyboard. Where do you go from there? Chris Jenkins checks out the competition and conducts a few auditions.

OVER the last couple of issues we've introduced the concept of MIDI, the Musical Instrument Digital Interface standard which allows your computer to control electronic musical instruments and effects. We've explained something about the necessary interfaces and music software packages you'll need, and mentioned some of the suitable instruments you can buy. This complete list will give you some further ideas about which MIDI keyboard to choose.

We've set a price limit of £600, which allows us to include some pretty impressive instruments without going over the top. First, though, a few notes about some of the jargon you're likely to encounter in your search for the perfect music set-up.

The two main classes of MIDI instruments are **synthesisers** and **home keyboards**. While the technology involved and the sounds produced are often very much the same, the two types differ very much in the sort of facilities offered.

Home keyboards are intended to be an end in themselves: for use entertaining yourself and the family. They normally have functions such as drum machines, single-finger chords, and auto-accompaniment built in. They often feature battery power; and they almost always include built-in speakers, so you don't need to connect them to an amplifier or hi-fi to hear them.

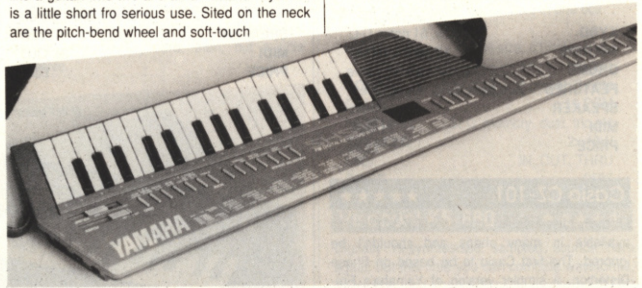
Usually you are given a small selection of preset sounds on a home keyboard, which can be altered in some cases but not totally changed. True synths, on the other hand, almost never include built-in drum machines, single-finger chords or other accompaniment features. They do, though, have a large selection of sounds which are totally reprogrammable using a list of 'sound parameters". Programming sounds is an arcane art which some love, others hate, and many simply choose to ignore.

The simpler choice, then, is to buy an all-in-one home keyboard. If you have any real commercial musical ambitions, though, go for a more flexible synthesiser; but be prepared to find yourself almost inevitably going on to spend money on a selection of drum machines, echo units, synchronisers, mixers, patch bays, multi-track recorders and the whole technological Spaghetti Junction of modern electronic recording.

Yamaha SHS-10 ★★★★

Latest and zaniest MIDI keyboard on the market, the SHS-10 is slung over the shoulder and played like a guitar. The two-and-a-half octave keyboard is a little short fro serious use. Sited on the neck are the pitch-bend wheel and soft-touch controls for rhythms, autochords, effects, sequencer and the demo tune; Wham!'s 'Last Christmas'. Nice FM sounds, but a pity that there's no MIDI IN.

KYBD	32 miniature, F-C
SOUNDS	25 FM presets, 8 note
DRUMS	25 FM
FEATURES	ABC, chord sequencer etc
SPEAKER	2 watt
MIDI	OUT only
PRICE	£149.99



Technical terms

A few helpful definitions. FM is *Frequency Modulation*, the digital proces by which Yamaha synthesisers produce sounds. Many other manufacturers have now licensed the FM process for use in their own synths. ABC is *Auto-Bass-Chord*, and SFC *Single-Finger-Chord*, both accompaniment features which allow you to play complex parts with single keys. Many manufacturers invent their own fancy names, but the principles are usually the same. PCM is *Pulse Code Modulation*, a process used to produce realistic drum and instrument sounds by digitally re-synthesising the waveform of a sound sample. Again, different manufacturers use different names for the same principle. PD is *Phase Distortion*, Casio's simpler version of Yamaha's FM.

We're leaving out of this feature some excellent keyboardless MIDI synth modules – such as the Roland MT-32 (reviewed last month), Yamaha TX-81Z and Orla DSE–12/24 – since as they're not much good without a controlling keyboard you're not likely to buy one before anything else. Also out are cheap sampling keyboards such as Casio's SK series, which don't have MIDI; and many useful discontinued or obsolete instruments such as the Korg EX-800 Expander and Poly-800 II synth, and the Roland Juno 6/60, which can now be picked up for a couple of hundred pounds.

Ratings

The **KYBD** category lists the size, number and span of the keys; **SOUNDS**, the number of preset/programmable sounds available, and the number of voices which can be played simultaneously (the 'polyphony"). **DRUMS**, the number of rhythm patterns available; **FEATURES**, the accompaniment features such as ABC, SFC or note sequence recorders; **SPEAKER**, the number and power of the built-in sound source (if there are two, then the keyboard usually has a stereo chorusing feature).

There are three possible **MIDI** sockets; IN, OUT, and (not 'shake-it-all-about'), THRU, which passes MIDI data unchanged to another instrument, allowing several to be chained together. **PRICE** is RRP including VAT. **RATING** gives an overall verdict with the more stars displayed the better. This takes everything including price into account. Even if you have no keyboard skills worth speaking of, many of these units will enable you to produce some impressive sounds and, in combination with MIDI, can open up a whole new world of self-expression – not to mention a lot of fun.

Farfisa FK 58 ★★

One of the many Italian keyboard manufacturers, Farfisa doesn't quite seem to have got the hang of the modern keyboard business (but check out their TK80, a later model reviewed below that promises well for the future). The MIDI features of the FK58 only work on MIDI channel 1, and for some reason it includes an RS-232 port which appears totally useless. Conventional organ-type sounds rather than FM.

KYBD	Full size, 61 notes C-C
SOUNDS	6 preset analogue, 8-note
DRUMS	8
FEATURES	SFC, Arpeggio, Trio
SPEAKER	2x4w
MIDI	IN, OUT, RS-232
PRICE	£249

Viscount KB200 ★★★★

Notable for its full-sized keyboard, the KB200 produces some full analogue sounds and excellent preset and programmable PCM rhythms. It also features a very powerful speaker, but bear in mind that it's mains powered only.

KYBD	Full-size, 61 notes C-C
SOUNDS	10 preset, 8-note
DRUMS	12 PCM, plusprogrammable
FEATURES	Autobass, SFC, Arpeggio etc
SPEAKER	10W
MIDI	IN,OUT
PRICE	£295

Casio CZ-101 ★★★★★

Officially discontinued now, the CZ-101 is still available in many shops and shouldn't be ignored. The first Casio to be based on Phase Distortion, a simpler version of Yamaha's Frequency Modulation, the CZ-101 is capable of creating some excellent realistic and synthesised sounds. Multi-timbral over MIDI (it plays four voices monophonically at the same time) the CZ-101 is fairly easy to program. The big beef is that there are very few on board sounds, and extra RAM cartridges are ridiculously expensive and hard to get. Like the Yamaha DX-100, the CZ-101 has miniature keys, and if you can't stand these you should look out for one of the larger CZ synths.

KYBD	Miniature 49-note C-C
SOUNDS	PD, 16 prese, 16 programmable, more on RAM
DRUMS	NONE
FEATURES	NONE
SPEAKER	NONE
MIDI	IN,OUT, THRU
PRICE	£299

Casio CZ-230-S ★★★★★★

A corker. Using stunning preset sounds based on Casio's impressive Phase Distortion synthesis, the 230-S also features heavy PCM sampled drum patterns, and such professional touches as a pitch bend wheel, portamento (glide between notes) and full MIDI. It's multi-timbral over MIDI (playing up to four different sounds at once under control of a sequencer), and there are also four programmable memories, though you'll need a software editing package to use them. Basically a preset version of the famous CZ-101, and dead brilliant.

KYBD	miniature, 49 C-C
SOUNDS	100 PD preset, 4 programmable, 8-note
DRUMS	20 PCM, preset/programmable
FEATURES	Rhythm chaining
SPEAKER	3W
MIDI	IN, OUT, THRU (Multi-timbral)
PRICE	£345

Viscount KB210 ★★★

One of many keyboards featuring 'teach-yourself-music" facilities. The 210 accepts ROM cartridges containing preset tunes. LEDs above the keyboard light up as the tunes play, waiting for you to hit the right note before continuing. Programmable PCM rhythms and full-size keys add to the 210's attractions for novices.

KYBD	Full-size, 61 note C-C
SOUNDS	10, 8-note
DRUMS	12
FEATURES	Autobass, SFC, memory, arpeggio etc
SPEAKER	10W
MIDI	IN, OUT
PRICE	£345

Casio CZ 230 S

Casio CPS-101 ★★★★★

Bet this one caught you out. It's a digital piano, the cheapest around. The CPS-101 is touch-responsive, playing louder or softer according to how hard you hit the keys. Touch sensitive keyboards are usually weigh in at much higher price tags, so this model is worth looking at for that feature alone. Its ten presets allow you to choose acoustic, electric, honky-tonk and other types of sounds – but does it sound like a piano? Well, it's a tenth the price of a concert grand...

KYBD	Full-size, 61 note C-C
SOUNDS	10 preset, 8-note
DRUMS	NONE
FEATURES	Note sequencer
SPEAKER	2x 5W
MIDI	IN, OUT, THRU
PRICE	£349

Casio HT-700 ★★★★

Using a much simplified version of PD synthesis, the HT-700 hits a nice balance between preset and programmable, home keyboard and synthesiser.

Features include RAM cards for extra voices and song storage,32 digital waveforms, five LFO waveforms, programmable filter and amplituide envelopes and selectable MIDI channedl. Worth seeing, if a touch over-priced. Hohner also produce this model, badgeD as the **Hohner KS49** – but it'll set you back an extra £20.

KYBD	Miniature, 49-note C-C
SOUNDS	20 upr, 10 lwr, editable, 8-note
DRUMS	PCM
FEATURES	SFC,Chordsequencer, autobass, harmonise etc
SPEAKER	2x1w
MIDI	IN, OUT
PRICE	£349

Casio HZ-600 ★★★★

Getting confused by all these Casio's yet? I know I am. This one is brand new, another preset/programmable hybrid with simplified PD-type sounds. Features include RAM cards for extra voices and song storage, 32 digital waveforms, five LFO waveforms, programmable filter and amplitude envelopes and selectable MIDI channel. Worth seeing, if a touch over-priced.

KYBD	Full-size, 61 notes C-C
SOUNDS	20 upper, 10 lower variable, 8-note
DRUMS	NONE
SPEAKER	NONE
MIDI	IN,OUT, THRU
PRICE	£349

Casio CT-630 ★★★★

A big crunchy keyboard, this one, with lots of sounds, ryhthms, clever gimmicks and MIDI facilities.

Some original sounds like Typhoon, and Plunk Extend along with the standard Jazz Organs and Marimbas; nice to hear modern electronic sounds along with the other drums, too. There are three MIDI modes which split the keyboard into different zones, but as it only transmits on channel one, this isn't as useful as it sounds. Once again, there's a Hohner lookalike – the **PK100.**

KYBD	Full-size, 61 note C-C
SOUNDS	10, 8-note
DRUMS	20 PCM
FEATURES	SFC, Autoharmonise, keysplit etc.
SPEAKER	2x 2W
MIDI	IN, OUT, THRU
PRICE	£379

Yamaha DX100 ★★★★★★

An incredible package, the DX-10 synth is excellent value and produces great sounds, including howling guitars, wicked basses, clanging pianos, zooming synths and bright strings.

Fully-programmable, 'four-operator' FM technologh – like that of the world famous DX7, but cut down a little – combines with protability, full MIDI spec and a massive 192 preset sounds, which can be transferred to and edited in the 24 programmable memories.

Pitch bend and modulation wheel, breath controller jack, LCD editing display, and a host of other features make this the choice of the dedicated muso on a budget. If you can't stand the mini keys, check out the DX27 – 61 full-size keys plus an almost identical spec – but £150 more!

KYBD	Miniature, 49 notes C-C
SOUNDS	192 preset, programmable, 8-note
DRUMS	NONE
FEATURES	NONE
SPEAKER	NONE
MIDI	IN, OUT, THRU
PRICE	£419

Casio HT-3000 ★★★★★

Like the others in the HT series, a good cross between progrmmability and presets. Clean, full sounds using 32 Waveforms, five LFO waveforms and programmable filter and amplitude envelopes, adjusted using a rotary dial. Lots of auto features, plus splittable MIDI inputs to drive the melody, chords bass and rhythms seperately. Worth looking at if you want something with more auto features then the CZ-230S. Again, the Hohner **KS61** is almost identical, but pricier.

Yamaha PSR 50

KYBD	Full-size, 61 note C-C
SOUNDS	20 upr, 10 lwr, more on RAM cards, 8-note
DRUMS	20 PCM, more on RAM cards
FEATURES	SFC, autoharmonise/bass, etc.
SPEAKER	2x2W
MIDI	IN, OUT, THRU
PRICE	£425

Elka EH105 ★★★★

Elka has only recently broken away from the organ-only end of the market, and the EH105 shows some promise for the future. Good preset noises similar to Yamaha's FM, with four programmable memories featuring parameters for waveshape, timbre, and pitch and filter envelopes. A very good selection of seventeen PCM drum sounds in the programmable rhythm section, and splittable MIDI channels.

KYBD	Full-size, 61 notes C-C
SOUNDS	15 preset, 4 programmable, 8-note
DRUMS	PCM, 18 preset 4 programmable
FEATURES	SFC, chord memory, solo chord etc
SPEAKER	2x 3w
MIDI	IN,OUT
PRICE	£450

Yamaha PSR–50 ★★★★★★

The cheapest Yamaha MIDI home keyboard is an impressive beast, featuring excellent FM voices and PCM drums. MIDI implementation includes selectable channel in/out, and even synchronisation by MIDI clock pulse to the drum section, which few home keyboards can boast. Not too many extraneous frills, either; overall possibily the best home keyboard at the price.

KYBD	Full-size, 49 keys C-C
SOUNDS	FM, 16 preset
DRUMS	16 PCM
FEATURES	SFC, autobass, memory etc.
SPEAKER	2x 2.5W
MIDI	IN, OUT
PRICE	£479

Viscount KB 550 ★★★★

Realistic digitally, resynthesised samples form the basis for the KB 550's sounds, so it's more interesting to play than many home keyboards. MIDI implementation includes OMNI on/off, and internal or external clock control of the accompaniment features. A good keyboard, then, but a little expensive.

KYBD	Full-size,61 notes C-C
SOUNDS	10 preset, 8-note
DRUMS	12 PCM
FEATURES	SFC, autochord, memory etc
SPEAKER	2x 5w
MIDI	IN, OUT
PRICE	£495

Farfisa TK80 ★★★★★

Lots of interesting features here. The preset sounds are digitally re-synthesised from samples, and there are 'special sounds' in which a percussive and sustained tone are layered together. You can program your own PCM rhythms, and the MIDI implementation includes variable channels for transmit and receive, and splittable sections. It also responds to MIDI Program Change and Song Pointer information, which is unusual. Check it out.

KYBD	Full-size, 61 notes C-C
SOUNDS	30 preset
DRUMS	16 PCM
FEATURES	Autochord, memorychord, autosolo, trio etc
SPEAKER	2x 4W
MIDI	IN,OUT
PRICE	£499

Gem DSK-6 ★★★★

Realistic Sample Wave Processing gives good effects and you can layer two of them together to produce thicker sounds. There are also manual play buttons for the separate drum sounds, good MIDI implementation and excellent speakers.

KYBD	Full-size, 49-notes C-C
SOUNDS	16 preset, 8-note
DRUMS	14 PCM
FEATURES	ABC, harmony, enchanced accompaniment
SPEAKER	2x 5W
MIDI	IN, OUT
PRICE	£555

Kawai MK-10 ★★★★★★

The business. Based on Kawai's Digital Waveform Synthesis, the MK-10 sounds great and has some awesome features; velocity response (hit harder and it plays louder), pitch bend wheel, keysplit, stereo rhythms, full MIDI with different channels for the bass, solo, poly, counter melody and drums, portamento, two massive speakers, and you can even play the drum sounds from the keyboard. A complete MIDI studio in one box.

KYBD	Full-size, 61 notes C-C, velocity sensitive
SOUNDS	18 preset, 8-note
DRUMS	16 PCM
FEATURES	SFC, memory, dual, trio,etc
SPEAKER	2x 10W
MIDI	IN, OUT, THRU
PRICE	£595

Viscount KB-880 ★★★★★

Digitally re-synthesised sampled sounds here again, but this time you can combine waveforms, envelopes and modulations to produce 10,000 combinations. Very powerful accompaniment and sequencer options make the KB-880 an impressive if expensive choice.

KYBD	Full-size, 61 notes C-C
SOUNDS	10 preset, programmable, 8-note
DRUMS	14 PCM
FEATURES	SFC, chordmemory, autoplay, sequencer
SPEAKER	2x 8W
MIDI	IN,OUT
PRICE	£595

Yamaha PSR-60 ★★★★★

Similar to the PSR-50, but features the Music Programmer, a sequencer which allows you to record chord, bass and solo tunes separately, then play them back together with the other accompaniment features. MIDI clock synchronisation to external insturments is supported,and you can playthe PCM drum sounds from the keyboard. Plenty to get your teeth into.

KYBD	Full-size, 61 keys C-C
SOUNDS	16 variable FM
DRUMS	16 PCM
FEATURES	ABC, SFCM, duet, rhythm vary, etc
SPEAKER	2x 2.5 w
MIDI	IN,OUT
PRICE	£599

MIDI MADE SIMPLE

A few points remain in our discussion of the MIDI (Musical Instrument Digital Interface) system, which as you should all know by now is the standard communication system for processor-controlled musical instruments.

Everything from synthesisers, keyboards, samplers and electronic pianos to effects, digital guitars, wind instruments, drum machines and sequencers can be processor-controlled, and thus MIDI-equipped these days. In the case of the last two categories we're talking about units which make things happen over a period of time – playing musical notes or drum beats in the pre-programmed patterns at a speed decided by the user.

Using several such units together means locking their running speeds together, since they're bound to drift apart even if you set their displays to the same BPM (Beats Per Minute) value. MIDI includes several timing codes to help you do this; the most common is the simple Timing Clock (which has been affected by changes in the MIDI standard since its launch; we'll concentrate on the current state of affairs, but point out that early MIDI instuments may need an update chip to make them compatible with the latest models).

If a sequencer or drum machine is running, it sends (or receives if it's slaved to another unit) the **MIDI TIMING CLOCK** (code 248) at a rate of 24 times per quarter note; these clocks are sent *in between* other codes such as **NOTE ON** and **NOTE OFF**. Being transistor-level binary codes, they're totally different from the Sync 24 clock pulses used by older non-MIDI drum machines, although you can buy interface units to convert one to the other.

Other Timing Codes are 250 (start), 251 (continue) and 252 (stop), the operation of which are fairly obvious. You can refer back to Issue 2, page 34 for a complete list of MIDI status messages and their respective codes.

Recently moves have been made to make MIDI compatible with SMPTE, the Society of Motion Picture and Television Engineers' time code system. SMPTE codes, which unlike MIDI can be recorded on tape, are long binary streams containing a time in hours, minutes, seconds and frames, the number of frames per second depending on the television standard being used. This means that there are four different kinds of SMPTE worldwide.

When SMPTE timings are expressed as MIDI codes they're known as MSMPTE (MIDI-SMPTE), or more popularly, at MTC (MIDI Time Code). Very few MIDI instruments respond to MTC as yet, but it's the coming thing, and will mean that you can lock your MIDI drum machine or sequencer to a film or video and have it start at exactly the right part of the tune wherever you start playing back the pictures.

In control

Enough of time codes. The other main area of MIDI we haven't covered is Controllers – the knobs and pedals on your synth which give expression to your playing.

Pitch benders, footswitches, footpedals and breath controllers are all MIDI Controllers. MIDI assigns plenty of codes for such purposes but doesn't specify exactly how they should be used, except in the case of the three-byte code 1011AAAA, 0BBBBBBB, 0CCCCCCC. This indicates Controller Information plus channel number (A), controller number 0-127, and controller value 0-127. When B=0 we're talking about the synth's Pitch Bender, so obviously MIDI can bend the pitch of any synth on any channel from 0-127 units.

Controller 0 is always the pitch bender, but other knobs or sliders ('continuous controllers') can be assigned to any controller number 1-31, and on/off switches can be assigned to 64-95.

Control by velocity or after-touch on the keyboard, which could open or close a filter, change a Modulation Index or increase volume or vibrato depth, is dealt with under different channel information categories; that is, there are different codes for each category but every one can be assigned a MIDI channel so only the correct synth in a multi-synth setup is affected.

Lastly, there's a MIDI Sample Data Dump standard in the process of development; it's hardly complete yet, since everybody's samplers work in different ways, but most samplers will now allow you to exchange sample waveshapes via MIDI if not all the details of loop points, filtering and so on. Some samplers run Sample Data Dumps at double the normal speed for MIDI data transfer; it may be that all of MIDI will be speeded up to this rate before long, but the established lower rate will probably not be completely superceded.

●MJ

PANEL OF EXPERTS

Baffled by MIDI? Want to know more but don't know where to turn? Can't get your DX7 to talk to your Watanabe CSD-Liquidator? ACE proudly presents its Panel of MIDI Experts. Each month the panel will respond to readers' MIDI problems, whether these be from seasoned MIDI musicians or those of us who think that a status message is a letter from Princess Di. The panel are ready to leap into action for the very next issue of ACE, so get those queries rolling in NOW!

Mark Jenkins

Previously Music Editor of Electronics and Music Maker, Assistant Editor of Electronic Soundmaker, and Technical Editor of Melody Maker. Now a regular contributor to ACE. In his spare time (about ten minutes every fortnight) Mark runs a small independent label for instrumental synthesiser music called AMP Records, and operates a 16-track studio, Unicorn, with a battery of MIDI synthesisers and samplers plus a collection of antique keyboards.

Michael Downey

Classically trained on violin and viola, Michael taught himself how to play guitar and keyboards, and later set up a recording studio in the Midlands which he ran for six years. He then left 'to pursue the computer side of things' and is now the ST software specialist at Argent's in Denmark Street, London.

John Robinson

John's at the raw end of the market – he uses a Spectrum with a RAM Machine interface and a real steptime sequencer to control a Casio CZ230S and a Yamaha PS6100 keyboard through MIDI. John spends his spare time writing routines in machine code and BASIC for MIDI control applications and also has a Cheetah sound sampler.

Howard Ingram

We're not exclusively concerned with MIDI in the music section of ACE. Howard's been involved with music for a number of years, during whh time he's built up a small 'home studio' in his attic using *out* MIDI. He'll be answering questions and suggesting alternatives for those readers who have not yet become involved in MIDI, or

Many thanks to all of you who wrote in. From time to time we'll be 'retiring' Panel Members to give other knowledgeable readers a chance to serve their turn. If you'd like to be considered, drop Steve Cooke a line addressed to: ACE MIDI PANEL, 4 Queen Street, BATH,BA1 1EJ.

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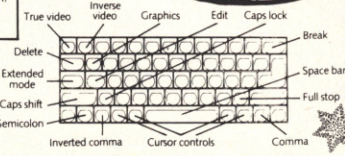

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PILGRIM

What a Christmas! The Pilgrim joins up with the White Wizard to take you on a red-hot romp through *Plundered Hearts* (is bondage back in fashion?); *Nord and Bert Couldn't Make Head nor Tail of It* (but can you?); *Beyond Zork* (FAR beyond Zork!); Pat's Patch; Shades Diary; and just about everything else you always wanted, except the brushings from Ol' Whitey's beard. So drop that rod and staff and read on...

PLUNDERED HEARTS

Do INFOCOM have the key to your heart?

>....You are intensely aware of the strength of his hard seaworn body, of the deep sea-blue of his eyes. And then his mouth is on yours, lips parted, demanding, and you arch into his kiss.

SO begins Infocom's adventure into the realms of romantic fiction – the panting, yearning (but ever so proper) and, above all, feminine world of Mills and Boon. Will the challenge of the game make a man of you? Or, if you're already made of puppy dogs' tails, will abandoning the trousers for a cotton frock give you a kick worth nearly £30?

Hardly surprising, really, this excursion into Barbara Cartland territory. Infocom's last release, *Lurking Horror*, was a straight-forward derivative of the horror fiction of H.P.Lovecraft and others, and *Plundered Hearts* simply continues this search for new sources of inspiration that can bring fresh blood to the adventure scene. There seems little doubt that the boys and girls at Infocom are trying very hard to come up with new slants for us players (take a look at both *Nord and Bert* and *Beyond Zork* later in this issue if you don't believe me), so the question in this case is not only whether we have a good new game, but whether we have a good new genre.

As an adventure, *Plundered Hearts* can be compared with *Hitchhikers*, in that there is relatively little exploring to be done. The first half of the game involves very few locations as you find yourself on board ship, travelling to St Sinistra after receiving a letter from the local big-wig, Jean Lafond, to the effect that your father is mortally ill.

En route, the boat you are travelling on is captured by pirates, the captain of whom, Nicholas Jamison, professes to be both a gentleman and a friend of your father's. He is also devilishly attractive, but more of that later. Throughout this early stage of the game you will have been able to type WAIT (or Z) continuously without much ill effect, and even if you adopt a more active strategy you will discover only three locations, two of which are beds (in which you are alone, I might add).

Finally, however, the pirate ship arrives at St Sinistra and Capn Nick pops off to visit Lafond and chop him into pieces. You now have a chance to explore the vessel and solve a couple of puzzles. Only one of these presents much difficulty, and the Pilg judges it to be something of a cheek because it is time-based – i.e. the solution to it appears out of thin air only after you have made a certain number of moves.

Having escaped from the ship (and taken care to have everything with you), you make for Lafond's residence to find your father, who you now have good reason to believe is a prisoner there. You are also, by this stage, more or less convinced that Capn Nick is a merry old soul, a point he soon tries to drive home with much labial contact. There's a ball going on, which you manage to penetrate, and the old devil can't keep his hands off you. Neither can the other old devil

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– Lafond – and the game becomes a challenge to evade the clasps of the one, seek the clasps of the other, and find Papa into the bargain.

RELEASE BOX

C64/128	£24.99dk	IMMINENT
ATARI ST	£29.99dk	IMMINENT
IBM PC	£29.99dk	OUT NOW
AMIGA	£29.99dk	IMMINENT

Compared to other Infocom releases, however, there seems to be much less gameplay in *Plundered Hearts* than, say, in *Sorcerer*. There are 25 points in all to be gathered, and the Pilg had garnered 19 in one afternoon's play. The programming's excellent, of course, with various participants coming and going at appropriate times, and delivering appropriate remarks en route. In this last respect the game is slightly similar to *Suspect*, which also portrays a country mansion where a ball is taking place.

So, as far as the challenge is concerned, I have to say that this is not one of Infocom's best releases. But what about the atmosphere side? What about the style of the text? Most of all (because I know this is what you're all interested in) what about the romance, the love, the unbridled LUST, the....SEX!

There isn't any sex – at least not what most modern juves would call sex. There is however a great storyline and the text is excellent – every bit as good as the early Infocom masterpieces, almost on a par with *Lurking Horror* (one of my favourites). Above all it shines out precisely because it is drawing on a new tradition.

Commodore 64 owners will, as usual, rave in frustration at the lack of a RAMSAVE facility – the 1541 being most unsuited to Infocom games – and the rest of us may feel that this game is slightly on the easy side, but what it lacks in these departments it more than makes up for in its originality. Certainly, with adventuring taking new directions like this, we all have a lot to look forward to. ●

SYSTEM	93	ENCOUNTERS	94
CHALLENGE	78	LANDSCAPE	90

VERDICT 905

NORD'N' BERT

INFOCOM lunacy for puzzle addicts.

FROM romance to wordplay, Infocom's sudden search for new ideas takes another twist. *Nord and Bert* presents you with eight mini-scenarios, seven of which may be played in any order to yield a series of passwords that gives access to the eighth. The unfortunate citizens of Punster have been subject to mysterious alterations of reality and you are charged with putting their world back on its feet and restoring common sense.

You do this by entering each scenario and confronting therein a succession of topsy-turvey situations in which the right input from yours truly will transform your location and/or the objects within it. This process is repeated until you have scored all the possible points within that section and received in return your password.

Rather than being an adventure in the traditional sense, each of these scenarios is really just a series of verbal puzzles. In this sense, gameplay is rather similar to early Spectrum adventures in which you could spend hours trying to guess what input would take you past the obstacle to the next location. The problem is that most people are likely to find approximately half the puzzles extremely easy and the other half almost impossible. For this reason, it's advisable to treat *Nord and Bert* like a game of Trivial Pursuit – maximum enjoyment comes from playing with a friend or two in attendance.

RELEASE BOX

C64/128	£24.99dk	IMMINENT
ATARI ST	£29.99dk	IMMINENT
IBM PC	£29.99dk	OUT NOW
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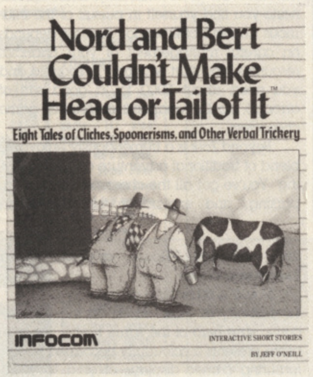

Nord and Bert Couldn't Make Head or Tail of It™
Eight Tales of Cliches, Spoonerisms, and Other Verbal Trickery
INFOCOM
INTERACTIVE SHORT STORIES
BY JEFF O'NEILL

Apart from substituting the pleasure of puzzles for the wonder of exploration, *Nord and Bert* also rings the changes on a number of other traditional adventuring habits. First, there are no directions. In each location a list of adjacent 'rooms' is printed at the top of the screen. To travel to one of these you simply type the name of the place in question. Similarly, there is no EXAMINE command and this function is performed by typing the name of the object followed by RETURN.

Fans of crossword puzzles and other forms of word-play will love *Nord and Bert*. Those of us with a disposition for exploration and discovery may find their patience sorely tried. Since puzzle magazines are the best-selling category of publication in the UK, the Pilg can only conclude that adventuring has spawned a new category of computer entertainment with tremendous potential. I suggest we call them 'pootles', the players 'pootlers', and look forward to hearing what readers think of this new art form. ●

White Wizard speaks...

...with forked tongue. I'm afraid I just can't allow this issue of ACE to pass me by without making comment on at least two of the games reviewed.

First, I reckon *Plundered Hearts* should get a lower rating. It's ridiculously easy for any seasoned adventurer and if you're paying between £25 and £30 for it you deserve a greater challenge. I agree that the text and the storyline are excellent, but is this enough?

While we're on the subject, I can't resist taking a poke at the Pilg for missing the real solution to his 'time-based puzzle' in *Plundered Hearts*. The solution he mentions, which appears out of 'thin air', appears only as a saving grace because he failed to crack the puzzle in time! Caught you there, Pilgy!

Nord and Bert – I really enjoyed this, being something of a quiz and puzzle fan, but I think the point needs to be made that it is definitely not a game for people expecting a traditional adventure. The best comparison I can think of is *The Travel Game* on the PC (reviewed in this issue). Again, however, I'm concerned about the long-term challenge.

I agree totally about the poor control in *Slaine* - it *is* infuriating - but once you get used to it the game plays reasonably well. Of course it's not a game for traditional adventurers, but I think that some people will get quite a lot of enjoyment out of it. I'd like to suggest a (marginal) improvement on the rating here.

Oh yes, and before I go, where's the retrospective review of *Suspect*, eh? Overwritten again, have you? Make sure it gets in next month, fatty. (*It will, baldy. Pilg.*).

SYSTEM	93	ENCOUNTERS	78
CHALLENGE	85	LANDSCAPE	85

VERDICT 895

BEYOND ZORK

ACE 920 RATED

INFOCOM introduce the Coconut of Quendor

ROLE-PLAYING programs tend to fall into two types – they're either games in which you form a 'party' of rogues to go adventuring (*The Bard's Tale*, *Mandragore*, and the *Ultima* series being good examples) or where you simply build up your own character and its attributes (as in *Moebius* or *Ring of Darkness*).

Unlike traditional adventures your 'game persona' changes during play. You can usually save your character(s) to disk and develop them over several games, often becoming quite attached to them in the process.

Unfortunately this business of character development tends to be pretty limited because the game formats themselves are limited – usually confined to treasure hunting and conflict. Puzzles are basic and there is little strategic planning to do. You just search, steal, and do your best to survive.

Enter *Beyond Zork* with two major advantages: Infocom's strength in game design, and their parser.

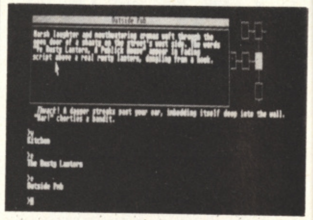
The game is of the single character type – you create your persona by sharing out an initial number of energy points between six different attributes, Endurance, Strength, Dexterity, Intelligence, Compassion, and Luck. Inexperienced players should concentrate on Endurance and Strength, since a higher rating in these enables you to survive longer in the initial stages of the game.

The program lacks graphics, unlike most other role-playing games, apart from an on-screen mapping facility. This in itself is something of a departure for text-only Infocom, but although useful it only displays a few locations at a time. A good map is still a useful asset and the game is easily charted.

The Infocom touch of mystery and imagination strikes from the very first screen. Instead of the usual hack, slay, and steal scenario you find yourself in pursuit of the infamous Coconut of Quendor. Success depends on careful management of your financial resources (you start with only 1 Zorkmid and you need about 2000 for a good suit of armour), spells, weapons, and other game characters.

Beyond Zork is a tremendously enjoyable blend of traditional adventure and role-playing. You've got all the character interaction, parsing, and exploration aspects of an adventure combined with the challenge of manipulating objects for trade and fighting as well as solving puzzles. And, of course, you must develop your character or die in the attempt. The combination of the two styles gives a game of great depth, with numerous sub- plots, challenges, and diversions. I'll leave you with this little quote from the game, where you have discovered a giant onion in the kitchen of the local tavern...

```
>PEEL ONION
Ouch! It's tough as leather.
     The cook's scowl changes to a
malicious grin. 'Listen boy', he says,
'You look like somebody who knows a
great vegetable when he sees one. You
want this onion? There's an old bottle
of wine lying downstairs somewhere.
Bring it up to me in one piece and the
giant onion's yours.' He glances at the
cellar door and shudders. 'Simple.'
```



New screen lay-out for *Beyond Zork*. The map on the right highlights the current location and gives exit information, but not much else.

SYSTEM	94	ENCOUNTERS	94
CHALLENGE	92	LANDSCAPE	90
VERDICT 920			

RELEASE BOX		
C64/128	£24.99dk	MMINENT
ATARI ST	£29.99dk	REVIEWED
IBM PC	£29.99dk	IMMINENT
AMIGA	£29.99dk	UNDECIDED

SLAINE

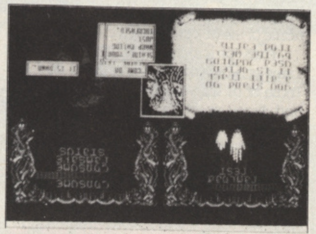
MARTECH move Celt from comic to computer

THERE have been many attempts to convert comics into computer programmes. Scott Adams took the Marvel superheroes and stuck them in rather primitive graphic adventures with tricky puzzles and poor parsers; Melbourne House came up with their own super- hero, *Redhawk*, and actually tried to create a comic on- screen, complete with speech bubbles and scrolling frames. Neither approach really succeeded, though fanatics could do worse than check out *Stifflip and Co* from Palace, which adopts the Melbourne House approach and improves upon it.

Slaine is something completely different, superficially at least. Based on the 2000AD comic strip hero of the same name, the program presents a colourfully decorated screen featuring cameo displays of your location, the characters in it, a text-frame, and – above it – a blank area across which various commands and playing options scroll smoothly and rapidly.

Slaine and his side-kick Ukko (both of whom are reasonably faithful in appearance and characteristics to their excellent comic counterparts) find themselves caught up in a search and destroy quest, with numerous ogres, dwarves and other enemies to do battle with as well as treasure to find and wrongs to right. Gameplay involves selecting (using a 'severed hand icon') the appropriate actions as they slip across the screen. This in itself takes at least half-an-hour to get used to and even then control is difficult if you're in a hurry (when fighting, for example). The method is ingenious and imaginative, the idea being that the options are thoughts flitting through Slaine's mind, but it is also highly impractical. Combine this impracticality with a rather limited scenario and you have a recipe for an intriguing, attractive, but seriously flawed game.

One thing *Slaine* and the earlier *Redhawk* have in common is the favouring of programming techniques over storyline. It's not an approach that brings either lasting interest or intense player involvement, but it does have a value in showing us different ways of structuring programs, some of which may be further developed in future. In the meantime, you're probably better sticking to the comic...



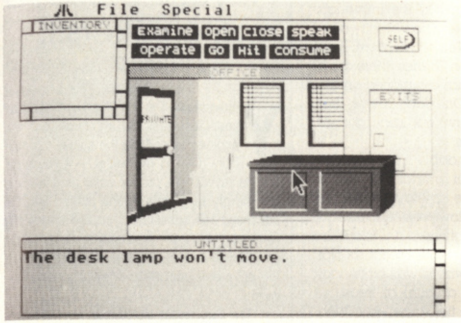
Slaine – those commands slip across the screen at an alarming rate. Can you click on *Defend* before you get the chop? The lower right-hand part of the display shows frequent cameo pictures of your location, objects carried, and your vile companion Ukko.

RELEASE BOX		
C64/128	£9.99cs, £12.99dk	IMMINENT
SPEC	£8.99cs,	OUT NOW
AMS	£9.99cs, £14.99dk	OUT NOW

SYSTEM	58	ENCOUNTERS	55
CHALLENGE	68	LANDSCAPE	62
VERDICT 615			

16-bit Snapshots

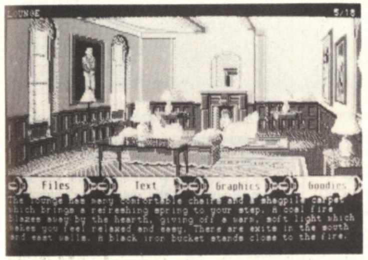
Games from Infocom and a number of other US publishers have long been released for 16-bit machines. The popularity of the IBM PC in the States ensured it a steady flow of games, and the Apple Macintosh has seen some revolutionary programming on the adventure side. ACE will be giving increasing coverage to these games in the coming months, but here are a few tasters to whet your appetite:



The desk lamp won't move.

ST: *Deja Vu*

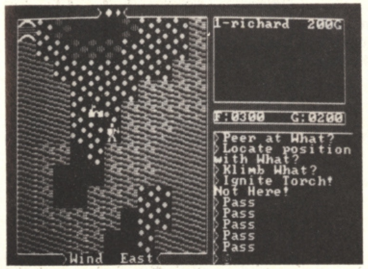
This is the first of a series of games originally written for the Mac and now appearing on the ST, courtesy of Mindscape in the US (and distributed by Mirrorsoft in the UK). Quite apart from some excellent graphics, the system allows you to use the mouse to open doors, select objects and even move them about. Here you see the Pilgrim raising a desk to check there's nothing underneath.



The lounge has many comfortable chairs and a shagpile carpet which brings a refreshing spring to your step. A coal fire blazes away by the hearth, giving off a warm, soft light which makes you feel relaxed and easy. There are exits in the south and east walls. A black iron bucket stands close to the fire.

Mac: *Guild of Thieves*

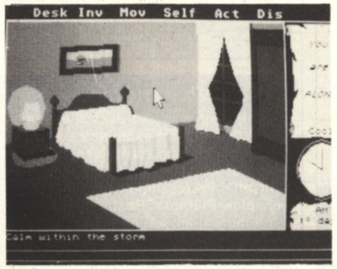
Not many people seem to realise that this Magnetic Scrolls game is also Macced. So's the *Pawn*. We'll be looking at some other Mac adventures over the next few months – some of them are pretty staggering



```
1-richard  200G
F:0300   G:0200
>Peer at What?
>Locate position
with What?
>Klimb What?
>Ignite Torch!
Not Here!
>Pass
>Pass
>Pass
>Pass
>Pass
```

PC: *Ultima IV*

Role-playing games could really benefit from 16-bit power and RAM capacity, giving them a scope and popularity they never managed to find on 8-bit micros.



Calm within the storm

ST: *Mortville Manor*

This French game distributed by Eidersoft features the best sampled sound effects we've heard. The characters in the game actually talk back to you, but unfortunately their accent makes much of what they say completely unintelligible. Promises well for the future, but since we're not fluent in sampled Franglais we still haven't been able to finish it.

Pat's Patch

This month Pat gives PAW users the chance to provide automatic exit printing...

The logic of our PAW routine is similar to that used on GAC, but a bit more fiddling is needed! As with GAC, what we have to do is discover whether an exit exists in a particular direction for the current room, and if so, print the relevant message.

PAW routine

(enter in Process 1)

```
1.    _     *      MES       'visible exits'
                   CLEAR     101

2.          SOUTH  COPYFF    38     100
                   LET       33       2
                   MOVE      100
                   ADD       100    101
                   NOTZERO   100
                   MES       'south'

3.    _     EAST   COPYFF    38     100
                   LET       33       3
                   MOVE      100
                   ADD       100    101
                   NOTZERO   100
                   MES       'east'
4.    _     WEST   COPYFF    38     100
                   LET       33       4
                   MOVE      100
                   ADD       100    101
                   NOTZERO   100
                   MES    'west'

5.    _     NORTH  COPYFF    38     100
                   LET       33       5
                   MOVE      100
                   ADD       100    101
                   NOTZERO   100
                   MES       'north'

6.    _     _      ZERO      101
                   MES       'none'
```

PAW notes

Line 1 This line prints the 'visible exits' message, and clears flag 101 for use as an accumulator.

Lines 2 to 5 Each of these entries covers a possible direction, and all work in exactly the same way:

a) The number of the current location (flag 38) is copied into flag 100.

b) Flag 33 holds the current verb, so this line sets the flag to indicate which verb we are considering (i.e. the number of the conversion noun)

c) **MOVE 100** looks up the connection table entry for the chosen direction and the current location. If a connection with another location is found, that location number is placed in flag 100. If no connection is found, zero is placed in flag 100.

d) For future use, we want to keep track of the result of **MOVE 100** for each direction, so **ADD 100 101** maintains a running total of the result placed in flag 100. (see Line 6)

e) Assuming that your adventure contains no connections to location 0, a result of **NOTZERO 100** means that no connection has been found for the direction under consideration. If flag 100 contains any number at all (i.e. is **NOTZERO**), then movement is possible and PAW looks for the next condact. If flag 100 contains zero, PAW drops through to the next entry without printing anything.

f) Thus any connection found from the current room will be printed to the screen.

Line 6 At this stage, flag 101 will hold the total of all numbers returned by MOVE 100 for each direction. If no valid connections have been found, nothing will have been added to flag 101, so it will now hold zero. But if any connections have been found, flag 101 will not be zero. If flag 101 is zero, the message 'none' is printed instead of one or more specific directions.

Letter from the SHADE

Sappho The Witch emerges from the embrace of battle and barbarian to bring you the latest gossip from Micronet's **SHADES** - the on-line multi-user game where real people get into some truly unreal situations...

Life in Shades is a busy as ever. The 80-column scrolling gateway is finally open, and about time too! Players thus have the choice of playing either the familiar 40 column viewdata format with the blue sky on a red horizon effect, or the faster scrolling format. I personally prefer the scrolling game (when I can get on) which isn't all that easy as there are only a few places available.

A new version of the game has been loaded; the new rooms added, puzzles changed, items moved, new mobiles, and so on. This in itself has caused quite a stir, with players complaining that it is too difficult, with too many dangerous mobiles.

The changes looked good, although it was obvious that players had to think harder than was previously necessary. Quite a few players had the new version worked out after a few hours work. But as they have spent so long time using the same 'reset routine' having to change to a more flexible approach it isn't really suprising that the game is a little daunting at first.

Wizard blottings

Meanwhile, a popular topic of heated discussion in the Shade has been the number of wizards that have been blotted, 'the Blot' being more or less equivalent to the FOD (finger of death) in MUD..

Some say that when a player has reached the exalted ranks of the Immortals then they should be able to do virtually anything that they wish. To some extent, yes, they should. However, on Shades. there are a number of restrictions that are placed on the wizards, and witches. One such rule is that Immortals should not give out large quantities of treasure to mortals.

This is understandable. Immortality would be de-valued if mortals could be given as much treasure as they wanted to get to Immortality. However, should an Immortal live in fear of giving out a few hundred points? Well, yes, it would seem so. Not so long ago Ziklag the wizard was blotted for giving Perkins a large amount of treasure, and now Puzi has gone the same way. Who said that it was better to give than....?

Taurus is, or should I say 'was', one of the latest Immortals, and he is now famed for being the shortest-lived Wizard in Shades history. After making Wizard one morning he accomplished Immortality for a whole day before his actions apparently called for the dreaded blot. I saw Taurus on the game a few days ago, and when asked if he was going to try for Wizard again his reply was simply 'You bet!'. Did Taurus deserve blotting? That's not a question that we can answer - the Guardians of the wizards/witches and mortals have to abide by those rules.

With all these 'Policemen' about it's enough to make the most stable persona paranoid. But then, just because you're paranoid it doesn't mean that they are not out to get you...

● **If you've any gossip for this column, pull your hat down over your ears, check no-one's listening, then mailbox me on 019998149. Stay Shadey!**

The Pilgrim's Player's Guide to Hitchhikers...

Part 2

You've arrived in the Heart of Gold, and your first task is to check out the engine room. Take the spare improbability drive to the bridge – if you have trouble activating it, put the small plug in it and **the dangly bit** (found on the plotter) into the advanced tea substitute (you **did** check the Nutrimat, didn't you?). Don't drink it unless you want to lose points. You can then activate the drive and pop off to some alternate universes.

The **Bugblatter beast** requires the towel, or rather you need it. Try popping it over your head if you're having trouble. Don't hesitate to vandalise the memorial and make sure you get the Interface.

Should you find yourself playing **Trillian**, check out Arthur, get the fluff and put it in the bag. **Ford** should go to Arthur's house and give him the towel. After you've dealt with Prosser (he must lie down, poor chap) make sure you give Arthur the satchel fluff and get the thumb before the fleet arrives.

Zaphod should ensure he gets the toolbox, small key, and **seat cushion fluff** before he leaves the boat. The guards will drop their rifles if required, whereupon you can blast them. If you're **really clever** you'll then use the **tea** as a Brownian Motion Generator, but this won't help unless you put the flowerpot inside the **thing** – which will return to you on the Heart of Gold later.

The **war room** is a doddle, really. Just listen in, get the **awl**, and make sure you take the **particle**. You'll then find yourself back in the HOG. You should by now have **four pieces of fluff**. You haven't? Oh dear...Have you got the **jacket fluff**, and the **seat cushion fluff**, **the satchel fluff**, and the...but we can't give it **all** away, can we?

Pop the four fluffs in the flowerpot, wait, then take the pot into the sauna. Eat, enjoy, and stand by for next month's final instalment, in which you finish the game.

Oh, and by the way, don't forget to take a careful note of the **tool**. You'll be lost without it!

No Problem!

We're a bit short of space this month, but all praise for these tips must go to Darren Hebden, Guy Derham, and M.Hodsman. Don't forget, the more clues everyone sends in for this section, the more help readers will find here.

Witches Cauldron

Turn Turn Turn Tacyssup transforms the cat.
Whisky, crushed shell, diamond, sheep's eye makes potion for gorilla transformation.

Terrormolinos

The steps have to be locked before use.
Lose the bull in the china shop.

Hampstead

The lathe retaining bracket, the tweeds and the arty mag are needed on the train to get the tie.
Don't go in the cinema.
Buy a suit with the credit card found under the bench.
To get the job in the bank, remember who gave you the tie and wear it with the suit when in the club.

ZZZZzzz

Aim the gun before firing. Fire at the Target first then the Duck.
Leave the bus with the balloon.
Drop the bullseye on the man guarding the border.

Three weeks in Paradise

Go between arrows marked 'in' and press 'A' to teleport.
Get the stuffing to get past the bird
Get Wilma's handbag to get past the crocodile.
Jump through the picture to the sea-side.
Press 'A' to swim up.
Walk onto sea plug to get to cave.

Pawn

Cover the wristband with the shirt to stop Guru laughing.
Tie the rake and hoe together with the shirt to lever the rock.
Climb over the rocks.
Exit maze if stuck.

Adventure Helpline Launch!
Check out page 144 for full details...

Next month...

The Pilg checks out Jack the Ripper, the White Wizard examines a state-of-the-art American adventure, Shadowfax, Pat Winstanley gets her PAWs on Gilsoft's Professional Adventure Writer, plus Pilgrim's Post, No Problem!, and more than you ever dreamed possible in five pages...roll on 1988!

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SCREEN TEST

Christmas is a-comin' and the software houses are slavering at the prospects of getting their hands on your cash. That's why they're bringing out all the big guns, and that's why we're reviewing more games than ever before in our history. 32 titles get the ACE treatment – and precious few of them are naff. Unless you've got pots of money it's going to be tough choosing between games of the calibre of *Nebulus*, *Stealth Fighter*, *Bobsleigh*, *Madballs*, *Buggy Boy*...but help is at hand; the ACE reviewing system is designed to give the clearest possible idea of how good a game is *and* how long it's going to last you. So look no further for your authoritative Yuletide software guide

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THAT REVIEWING SYSTEM

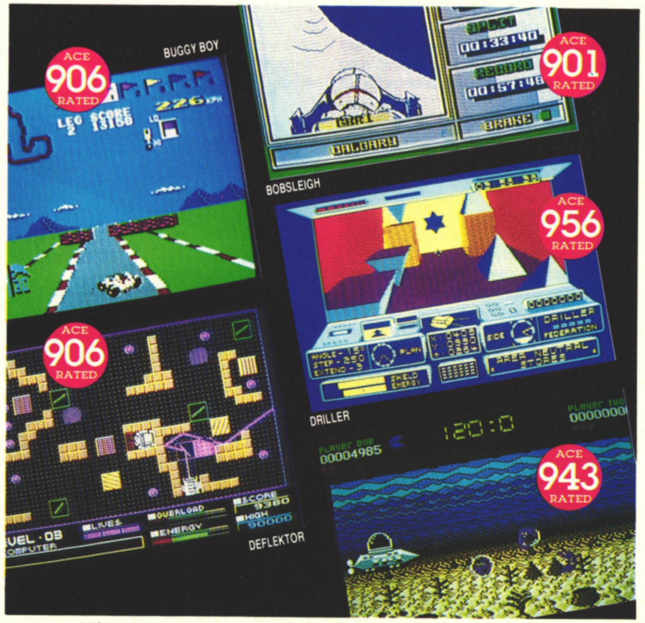
Regular readers will notice some subtle but profound changes this month in the layout of our reviews.

To make our coverage even more thorough, we've introduced separate Predicted Interest Curves and ACE Ratings for *all* versions of a game, along with separate comments boxes.

The main review now tells you how the game is structured and how it plays; the separate boxes let you know how each version rates in terms of Graphics, Sound, IQ Factor and Fun Factor.

You'll also notice that we've dropped the bars giving a readout of these ratings in favour of a simple score out of 10; this was partly because of the pressure on space, partly because some people (no names, no pack drill) complained that they didn't find the bar ratings too easy to understand.

We're sure that these tweakings will make the system work even better; it's now clearer to owners of whatever machine a game is released on just what we think of that version.



PROJECT STEALTH FIGHTER

MICROPROSE sneak you in to the skies

DESCRIBED as the all-but-invisible aircraft, the F-19 Stealth Fighter is America's latest all-weather reconnaissance and strike fighter.

Having signed all the necessary top secret documents, the player climbs into the cockpit and takes to the skies in an attempt to combat international terrorism. Included in the game are four scenarios: Libya, Persian Gulf, North Cape and Central Europe and there are various missions to be completed within each scenario e.g. the Libya mission could have the player destroying oil wells, oil terminals, S.A.M. (Surface to Air Missile) battery radar bunkers and airbase control towers. Alternatively the player could sneak in and photograph the installations using the on-board 135mm/IR camera.

The level of competence of the opposing forces can be decided by the player, from green (unskilled and unsophisticated) to veterans (battlewise). Having decided on, and set the various parameters, the player takes to the sky and views the action from one of three cockpit views – left, right or centre. The centre display is the player's main viewscreen and therefore carries the Head Up Display, (H.U.D.). This gives the player all the necessary flying information including altitude, velocity, range-changeable radar and a short range map.

The F-19 Stealth Fighter can carry an impressive array of weapons, and before each mission the player can decide exactly what armaments he should carry. Despite the vast amount of detail provided in the flight manual and technical supplement the aircraft is very easy to fly. This is probably due more to Microprose wanting to involve the player in the action side of things rather than accurately re-create the flight controls.

Once you're familiar with the controls and the game, you can start to worry about promotion. Successfully completing a mission can have the player advancing through the ranks toward Brigadier General, or indeed could result in the player receiving one of four decorations. Thankfully a save option is included so you can fly whenever you're free.

Project Stealth Fighter is certainly an enjoyable game; there are enough technical details to keep the player involved and certainly enough different and varied missions to keep the player flying.

● Andy Smith

Gentlemen take polaroids...

If your morals won't let you fly over strange and wonderful lands and drop bombs on the people below, then never fear. *Project Stealth Fighter* can have the player flying reconnaisance missions merely shooting photographs of various military installations. Of course someone else will view the photographs and probably go bomb the installations at a later date – but at least *your* concience will be clear.

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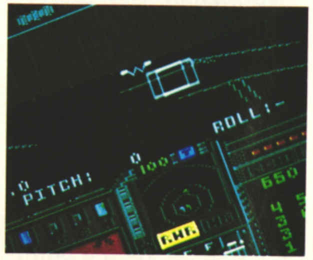
C64 Version

The screen is well designed and the graphics are as colourful as you'd expect. Sound, too, is up to standard with whining engines and authentic-sounding explosions. Not as demanding intellectually as the true flight sims – but a lot more fun.

GRAPHICS	8	IQ FACTOR	5
AUDIO	8	FUN FACTOR	7

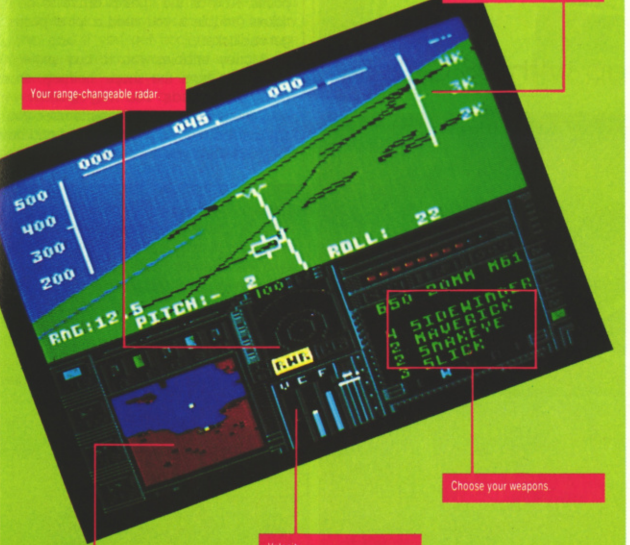
ACE RATING 863



Night flying - it's time to display your skills at dogfighting.

Is it a bird?

Flying over Libya, on a mission to bomb some installation. Choose your weapons well.



Altimeter.

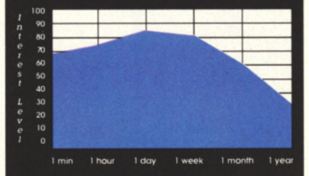
Your range-changeable radar.

Choose your weapons.

Velocity.

Short range tactical map.

PREDICTED INTEREST CURVE



Learn to fly and the fun really hits the clouds: gets to be tactical so you'll need your brain clear and alert. the save facility will keep you coming back for more

---

ACE 906 RATED

DEFLEKTOR

Mental exercise from VORTEX/GREMLIN

LASERS may be a standard part of the shoot-em-up author's repertoire, but they rarely play any great part in brain games. That's rather a pity: even though it only scratched the surface with its simple mirror arrangements, Virgin's *Rebel* showed what absorbing puzzles you could make out of optics.

Don't despair, laser fans. Where the Gang of Five didn't quite do the trick for Virgin, Vortex's one and only Costa Panayi has come up trumps with this new deflekt-em-up. Now you've got multi-direction mirrors, fibre-optic conduits, polarising and refracting blocks to deal with as well as bombs, blobs and some thoroughly infuriating aliens.

It's a simple idea really (though you needn't think that'll save your sanity). Each screen has a laser and a target, and your aim is to connect the two using the optical devices to hand. These are mostly mirrors, fixed in position but pivoting so that you can point them more or less whichever way you want. Just use the joystick to move your cursor over the mirror you want to adjust, hold the fire button down, and push left or right to swivel the mirror one way or the other. In addition, different screens have fibre-optic cables - aim a beam into one end and it comes out of the other still going in its original direction – plus automatically rotating mirrors and various other devices which you can use to your advantage.

Before you can construct the beam path, you'll have to clear the screen of blobs. These little devices have been left lying around by aliens, and you only get clear access to the target once you've zapped them all by deflecting the laser so as to hit them. It's tricky work: the aliens also leave bombs lying around, and playing the laser on one of these for too long will blow you to pieces, costing you one of your three lives.

Bombs aren't the only hazards. Many of the screens have walls of absorbing brick, and these can prove dangerous: while you can glance the beam off them if you hit at a shallow enough angle, they'll overload and destroy your laser if you leave the beam playing on them at right angles. Similarly, if you bounce the beam back down into the laser projector you'll soon get an overload. In either case, or if you take too long and run out of power for the laser, you lose a life.

If all these ways of dying sound easily avoidable to you, you're reckoning without the game's most maddening feature – aliens! These interfering little menaces don't take kindly to people zapping their blobs, so they'll scramble your nicely arranged mirrors whenever they get the chance. You can knock them out for a while if you catch them messing with a mirror – just put the cursor over them and press fire – but they can do for you a sight more permanently by setting up an overload or pointing the beam at a bomb. If your cursor's over the other side of the screen it's a mad dash trying to save the situation here, and time's still ticking away.

The gameplay has a number of slightly unusual touches to it, the main one being the system of lives: you start with three of them for each screen, no matter what. Scrape through a screen by the skin of your teeth and you've still got a full set of lives for the next one – but come through unscathed and your bonus'll be that much larger. This makes it easy to get through to reach the screen you're currently stuck on, but doesn't provide too much of an incentive to perfect your technique.

Fascinating stuff that keeps your heart firmly in your mouth, *Deflektor*'s got 60 screens of beam-bouncing problems. With some of these being a touch on the easy side that may not give it the longest life imaginable, but it is addictive stuff. Vortex fans, you have not waited in vain.

● Andy Wilton

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SPEC 48k	£ 7.99cs	OUT NOW
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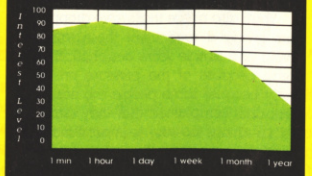
Spectrum Version

Coded by Costa himself, and it shows: bright colours and chunky shapes earn this one a big thumbs-up on graphics.

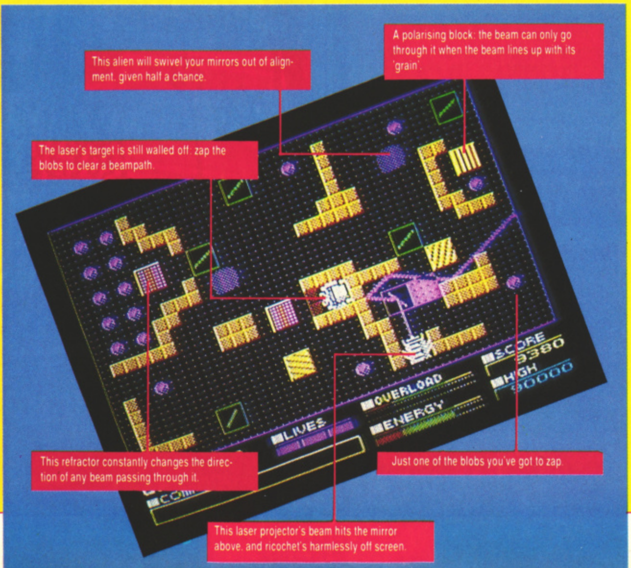
GRAPHICS	7	IQ FACTOR	8
AUDIO	4	FUN FACTOR	7

ACE RATING 906

PREDICTED INTEREST CURVE



Brainy stuff and addictive too – but the odd lives system slightly mars the long term enjoyment



A polarising block: the beam can only go through it when the beam lines up with its 'grain'.

This alien will swivel your mirrors out of alignment. given half a chance.

The laser's target is still walled off: zap the blobs to clear a beampath.

This refractor constantly changes the direction of any beam passing through it.

Just one of the blobs you've got to zap.

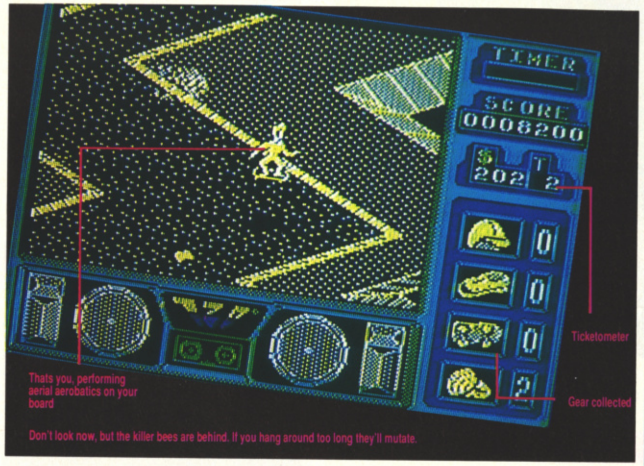
This laser projector's beam hits the mirror above. and ricochet's harmlessly off screen.

C64 Version – a taster

The near-finished version we saw was great to look at and listen to, but the Gremlin conversion team slipped up rather on the cursor: it gets in the way of the selected mirror, so you can't really see what you're doing when you swivel it around.

720 °

Get on board and go with US GOLD



Ticketometer

Gear collected

Thats you, performing aerial aerobatics on your board

Don't look now, but the killer bees are behind. If you hang around too long they'll mutate.

SKATE City is where the action takes place in this skateboard simulation, based on the coin-op of the same name.You and your board must go places, do things and generally accumulate points – and what do points make? Prizes! Correct, but don't expect an all-expenses-paid-trip-to-Disneyland. The only prize you'll get is a ticket to the skate park where you can strut your stuff and... collect more points.

Before rolling in to Skate City you must decide upon your skill level. Whether you opt for trainee or old hack there's still plenty to avoid. So remember, be careful out there.

The city – an American city (where else would you see body builders, unicyclists and break-dancers on the same street?) – consists of four parks, four shops, streets and inhabitants. The idea is that you roam the streets collecting points and money. Points are gained by jumping, spinning and pulling wheelies – the more exotic your trick, the richer your reward. Hidden locations also clock up welcome points. Certain freebies, such as dollar bills, add to the bank balance.

At the start of the game you have three tickets, which give you access to the parks. Enter a park and you lose a ticket, but get the chance of performing (see box) and gaining a medal – Gold, Silver or Bronze. Do well and you get a decent medal, and plenty of points. And as the points arrive so do the tickets (trouble is you need a lot of points to get one ticket).

Money enables you to buy protective equipment from the shops: helmets, shoes, pads, skateboards. You may wonder why you need this gear; well, remember you're on American turf. If you look good and have the goods then you're bound to perform well.

You may get the impression that there is little to *720*. In fact, there are plenty of obstacles to hinder you. If you hang around too long you are attacked – inexplicably – by swarms of killer bees; cyclists, motorcycyclists and pedestrians can take the wheels from under you; slurry pits aren't too healthy either; and if you get cocky you'll plunge from your board anyway. After visiting each of the parks in turn you move to the next level. Things get hard quickly. It's not long before you're stuck in the early-morning rush hour and the bees think you're the tastiest thing since Adam's apple. ● Richard Monteiro

RELEASE BOX

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Park performer

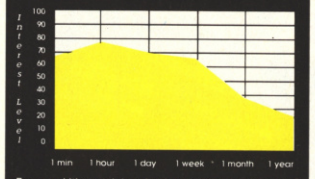
Downhill – stick to the slope and you're okay. The easiest of the bunch.
Jump – can be tricky if you don't remember when and where to jump.
Ramp – simple, just keep moving. When you get to the top change direction. Jumping can prove dangerous.
Slalom – sharp directional changes are needed to keep you going through the flags.

SpectrumVersion

While skateboarding can be a lot fun once you've got the hang of the controls, 720's graphics slightly take the polish of the game – they're a little on the indistinct side. The 'killer bees' in particular swarm so closely that they might just as well be called a killer blob. The sound, too, is nothing to write home about.

GRAPHICS 7 IQ FACTOR 5
AUDIO 4 FUN FACTOR 7
ACE RATING 721

PREDICTED INTEREST CURVE



Fun – and it's certainly safer than the real thing – but it isn't demanding enough to really last the distance

BOBSLEIGH

ACE 901 RATED

Ice screaming with DIGITAL INTEGRATION

NICK Phipps is not a name that springs immediately to mind when you're asked to think of a top class sportsman. He is however, currently rated as Britain's top Bobsleigh driver, and has endorsed this latest simulation from Digital Integration.

The player gets a driver's eye view of all the action on six World Championship tracks, and has to fight his way from amateur status to Olympic standard by sheer guts, skill and determination.

Simply learning the controls and winning the odd race is not enough in this game. The player has to compete and do consistently well enough to win the sponsorship money needed for the team's upkeep. Crashing a bobsleigh can be disastrous not only for your chances of a place in the winning top three but can hurt your wallet as well; repairs cost money but lost sponsorships can have you teetering on the brink of bankruptcy – and becoming bankrupt means you'll have to restart the game.

Before you start into serious competition, you can practice each run in whatever order you desire, which is helpful in familiarising the player with problem corners etc. You can then compete against other teams for just the one run which helps to give you an idea of how well you compare to them.

Getting to grips with the runs is, as you'd expect, tough. It takes a keen eye and sharp reactions to read the corners and find the path of least resistance which you need to follow if you're to achieve anything like the speeds needed to earn yourself a place on the leader board. Make sure you consult the weather reports before the start of a race; selecting the wrong runners for the bob' can lose you valuable seconds on a run.

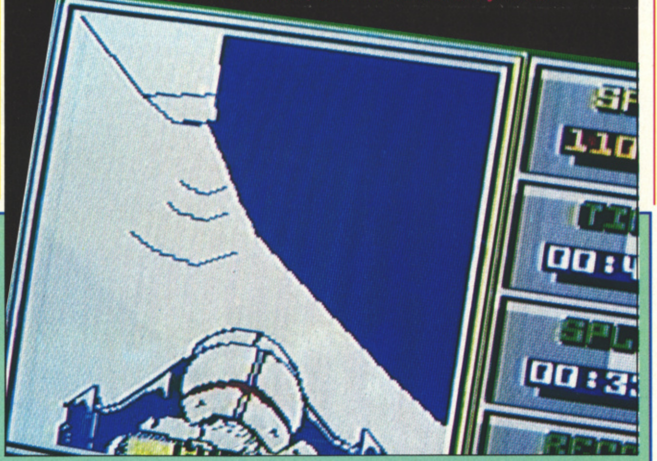
Options to increase your team's fitness are included, and the idea is to waggle your joystick (or use the keys) as fast as possible; combined with having to waggle the joystick at the start of each race (simulates your team running with the bobsleigh to the start line) this can have you feeling physically tired at the end of a season.

Bobsleigh is a thrilling game with enough strategy involved to add another dimension to a highly competent and addictive simulation. ● Andy Smith

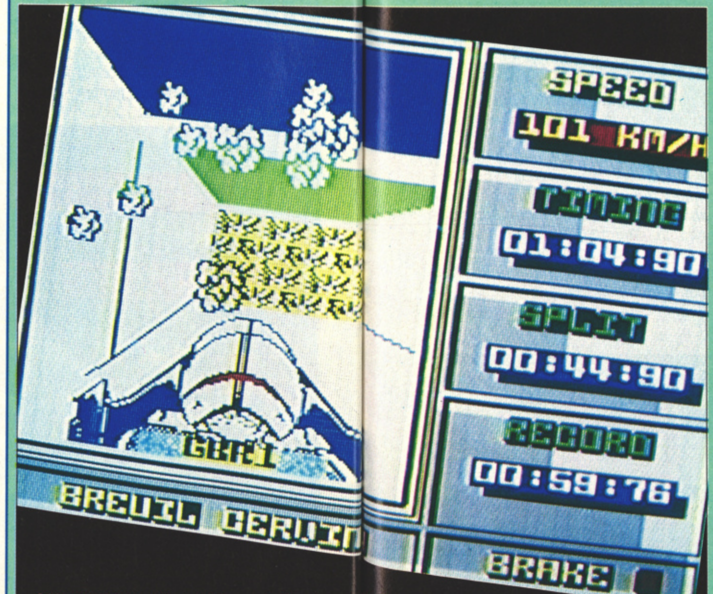
RELEASE BOX

C64/128	£9.95cs, £14.95dk	OUT N OW
SPEC	£9.95cs	OUT NOW
AMS	£9.95cs, £14.95dk	DEC 87

Cold Shoulders



Thundering down the run, it takes a keen eye and nerves of steel to hold the bobsleigh on course.



Safely past the finish line. Hit the brake before you plough into the straw b nd of the track.

C64 Version

The menu options of the Commodore version are well designed and drawn and the music and other sound effects are superb. A shame then that the game itself is not so hot. You get no real feeling of control over the bobsleigh – it seems more a case of sit back and watch the action. All the options are there but it's just not so much fun on the C64 as it is on the Spectrum

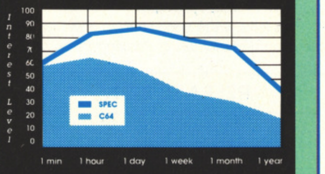
GRAPHICS 5 IQ FACTOR 6
AUDIO 6 FUN FACTOR 5
ACE RATING 567

Spectrum Version

Fast and furious, you get a real sense of speed on the Spectrum. All the action is well animated and controlling your bobsleigh properly takes a fair bit of practice. Sound is used well and adds to the impression that it's just you (and your team) versus the hard unyielding ice as you thunder down the run. Gripping, nail-biting stuff that is a thrill to play.

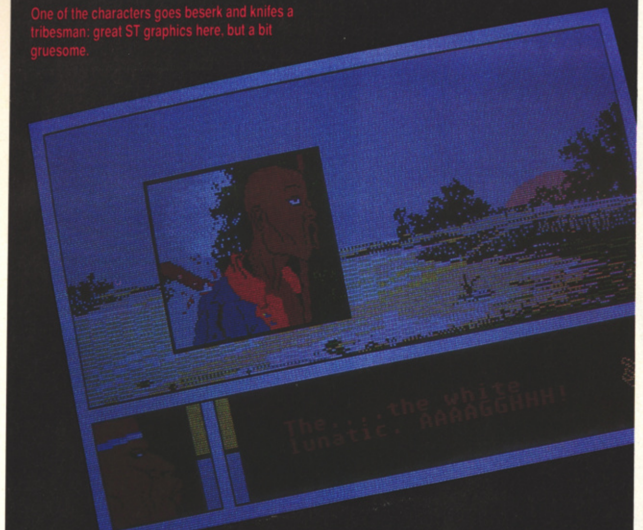
GRAPHICS 8 IQ FACTOR 6
AUDIO 8 FUN FACTOR 8
ACE RATING 901

PREDICTED INTEREST CURVE



Thrilling and addictive on the Spectrum once you learn the controls; on the C64 the poor controls and weak graphics spoil the fun

African Violence



One of the characters goes beserk and knifes a tribesman: great ST graphics here, but a bit gruesome.

PASSENGERS ON THE WIND

INFOGRAMES blow in from Africa

DAHOMEY was rather a rough place in the late 18th Century, *mes enfants.* The little West African kingdom had enough homegrown dangers for most people, what with lions on the prowl and a very short-tempered autocrat on the throne, but when your companions included poisoners, lunatics and slavers – well, you really did have to watch your step.

Yes folks, we're back with Isa and Mary, the central characters of *Passengers on the Wind.* Based on a classic French comic strip, the original game related a tale of intrigue and high adventure at sea with a graphic style that amazed British players and a game structure that left them baffled. *Passengers II* takes up the story, and the strange gameplay style, in Africa.

The first scene opens with one of the game's many beautiful screens, depicting the Dahomey village where King Kpenga holds an audience for Isa and her companions. It's then your job to try and help the story unfold. For the most part you control the plot by: selecting one of the game's numerous characters in a small window below the main picture, and clicking on them with the pointer to make them speak. There's only occasionally any choice over what they say – it's mostly just a matter of piecing different people's speech together correctly to advance the plot.

As well as assembling dialogues in this way you can affect the plot directly by clicking on different parts of the main picture, setting action sequences in motion. You're never really controlling the proceedings in all this – just revealing a fixed story line. The actions are shown as panels overlaying the main picture, rather than as conventional animation. There's rarely any indication of where these sequences are possible, so you'll probably end up clicking 'dead' background an awful lot of the time just on the off chance.

Somewhere between a story and a jigsaw puzzle (and a long way from anything you'd normally call a game) *Passengers II* is very much the comic strip equivalent of Cinemaware. It's easily the equal of (say) *Defender of the Crown* visually, but Cinemaware's gameplay shortcomings are also in evidence – with a largish dose of confusion thrown in. The trial and error involved defeats what challenge it might have had as a game, but *Passengers II* has an undeniable (if short-lived) fascination.

● Andy Wilton

RELEASE BOX

C64/128	£12.95cs, £14.95dk	REVIEWED
ATARI ST	£19.95dk	REVIEWED
AMS	£12.95cs, £14.95dk	REVIEWED
IBM PC	£24.95dk	IMMINENT
AMIGA	£29.95dk	IMMINENT

Atari ST Version

The gameplay is effectively the same on all machines, but for colour and graphic resolution this is the best of the bunch (until the Amiga version turns up, at any rate) – and very nice it looks too.

GRAPHICS	10	IQ FACTOR	7
AUDIO	5	FUN FACTOR	2

ACE RATING 678

CPC Version

The CPC can't match the ST for graphics of course, but it comes pleasantly close here thanks to careful use of colour. The tape version's multiload can get a little tedious, and the lack of a mouse makes control a little clumsy.

GRAPHICS	9	IQ FACTOR	7
AUDIO	7	FUN FACTOR	2

ACE RATING 665

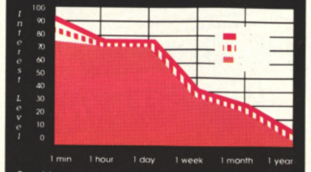
C64 Version

Graphically the poorest of the versions (though still a good-looking game) and also, of course, the slowest on disk.

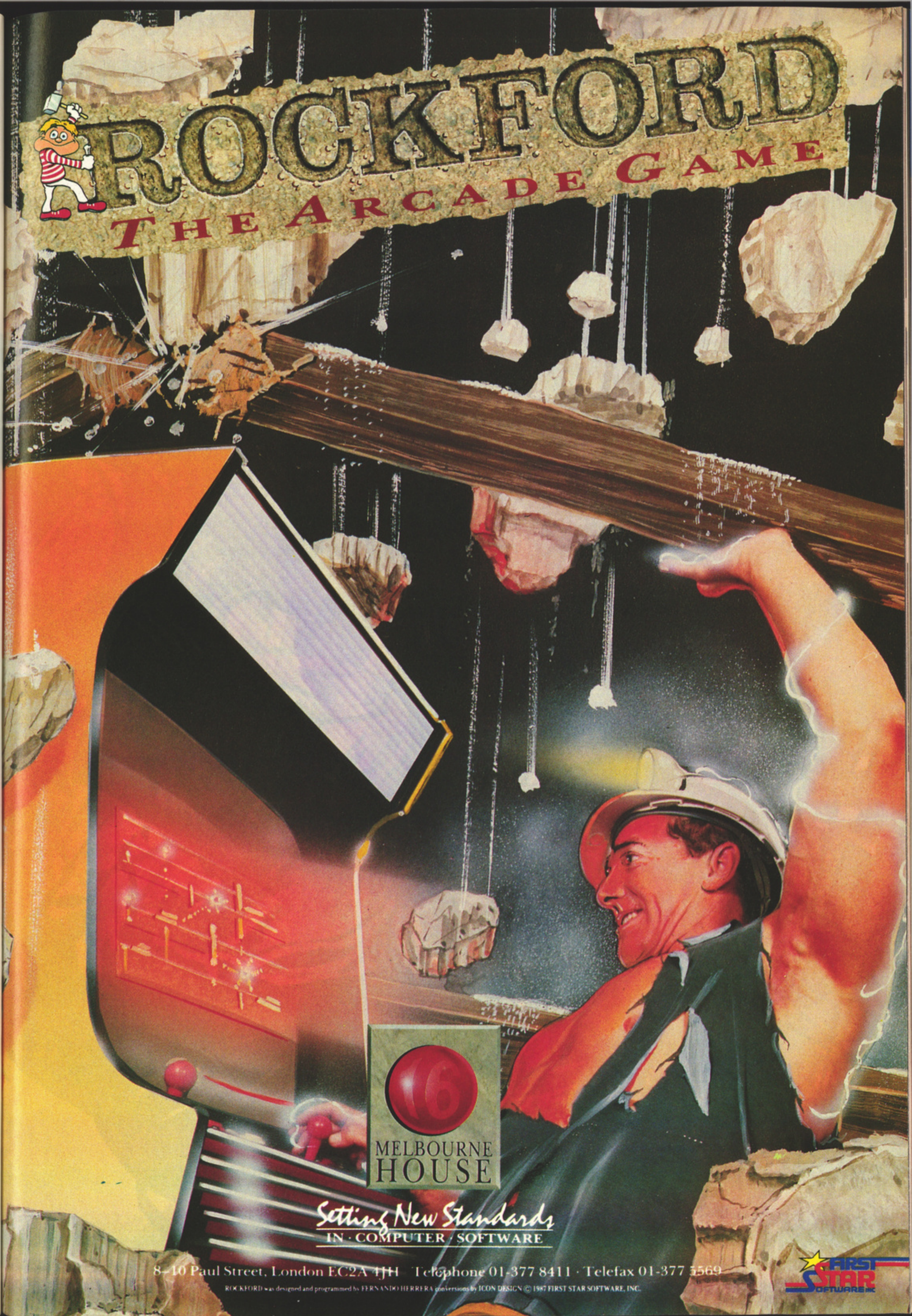
GRAPHICS	8	IQ FACTOR	7
AUDIO	7	FUN FACTOR	2

ACE RATING 659

PREDICTED INTEREST CURVE



Graphics separate the versions at first, but without solid gameplay they all have a similar decline once the initial fascination wears off.



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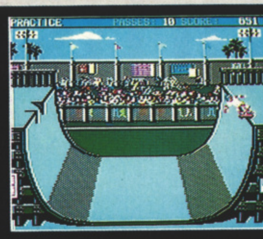
DIE
SKATE
STATE OF THE ART
ART OF THE STATES
FRANK LANGFORD

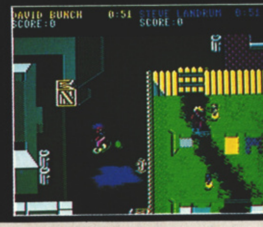
Forget about games. Learn about events. Events are about competition. The Pool Joust, Downhill Race, Freestyle Ramp, High Jump and the Downhill Jam. Play alone, with a friend or pit your skills against Lester. Skate or die – it may be fun but its serious.

SMOKIN' THE HALF PIPE

Roar down the ramp and fly up the other side. Live on the edge where you go for rock 'n rolls, hand plants (shown here), leg plants, railslides, even methods. Get airborne for 720's, ollies, front & backside aerials, and tweaks.



PRACTICE
PASSES: 10 SCORE: 651



DAVID BUNCH 0:51 STEVE LANDRUM 0:51
SCORE:0 SCORE:0

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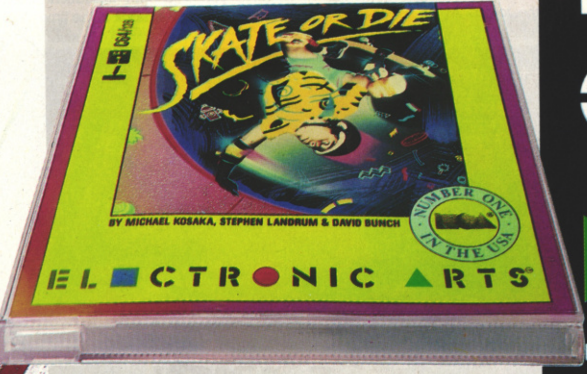

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NEBULUS

ACE
943
RATED

Towering originality from HEWSON

BRAVE new game formats are rare things these days, and difficult to come up with too. That must make programmer John Phillips a pretty hot property: after the unusual true 3D and sideways motion of *Impossaball*, he's just delivered this strikingly unusual rotary masterpiece.

The basics of the game are simple stuff indeed: eight cylindrical towers project from the ocean, and you have to destroy them. To do this you must guide your little character Pogo to the top of each tower, causing it to telescope down into the sea. A spiral of platforms, ledges and lifts form your route up the outside of the tower wall, along with several tunnels directly through the tower's axis. It's no picnic: gaps between (and disappearing blocks in the middle of) ledges have to be jumped, and nasties in your path need shooting or dodging.

RELEASE BOX

C64/128	£8.95cs, £12.95dk	OUT NOW
SPEC	£7.95cs	OUT NOW

These immediate problems will have to wait for the first few games, because the chances are you'll just be staring at the screen in wonder. As soon as Pogo starts to move, you'll be struck by the startlingly odd way *Nebulus* handles his movement around or through the tower. As he walks along ledges the game keeps him in full view by rotating the tower behind him, platforms and all. This 'rotary scroll' is dazzlingly original stuff even on small movements, but *Nebulus* can do better: if Pogo steps into a tunnel, the tower spins through 180 degrees to show him popping out the other side.

Graphic ingenuity isn't enough by itself of course, but you'll find that the gameplay too is solid stuff. Though based on conventional timing and jumping problems, *Nebulus* has subtle twists to it that make for real addiction. For one thing, most nasties don't kill you outright: they merely knock you off your ledge, lift or whatever. If you're still fairly low down the tower (or just unlucky) you'll fall into the water and drown, losing one of your three lives.

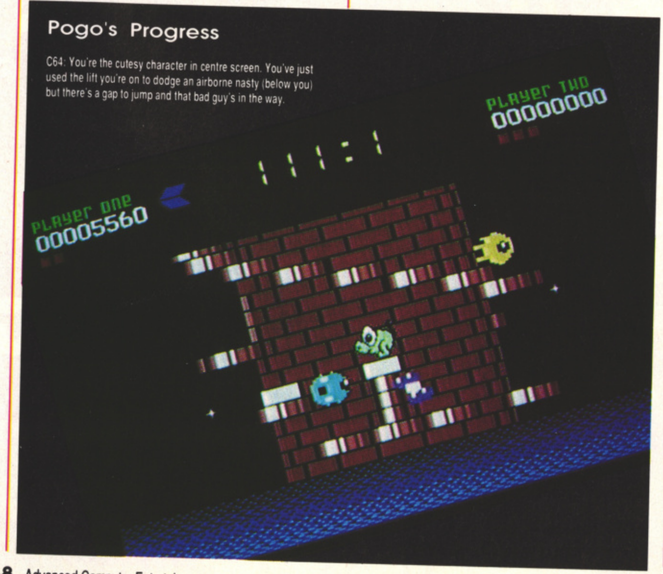
Once you've climbed to a decent height the worst you have to fear is a tumble onto a lower platform forcing you to cover the same ground again – but this is quite bad enough. You scale each tower against a time limit, so the delay involved in climbing back up can cost you dear as well as drive you wild with frustration. There's a certain amount of slack in the time allotted for each tower, but a few falls soon eat this up and running out will cost you a life.

With practice you can get past (or shoot) the towers' nasties fairly reliably – though the timing can be very demanding in places, especially on the Spectrum version – but that still leaves you with airborne bad-guys to deal with. These flying nasties turn simple problems into death-traps if they appear at the wrong moment. Waiting on lifts or dodging into tunnels can save your bacon here, but you'll need to plan ahead a little.

Nebulus strikes a fine balance between frustration and addiction, and should keep you occupied for months even with only eight towers to climb. Add in the flair and originality of that rotary scroll and you've got a good-looking, playable winner of a game.

● Andy Wilton

Pogo's Progress



C64: You're the cutesy character in centre screen. You've just used the lift you're on to dodge an airborne nasty (below you) but there's a gap to jump and that bad guy's in the way.

C64 Version

Bright, smooth and fast-moving, the C64 *Nebulus* is a joy to behold as well as to play. There's an extra between-levels sequence where you catch fish for bonus points en route to the next tower, but the tremendous parallax graphics and variation of pace this offers are just icing on the cake: the main game's good enough not to need it.

GRAPHICS	9	IQ FACTOR	8
AUDIO	7	FUN FACTOR	7

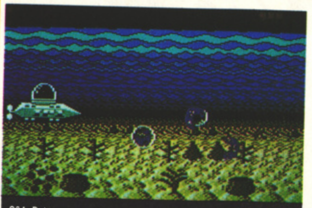
ACE RATING 943

Spectrum Version

Though it obviously can't match the C64 version for colour or sound, the Spectrum *Nebulus* is very nearly as fast and every bit as addictive. No fish to catch between levels, but it 's still a cracker of a game.

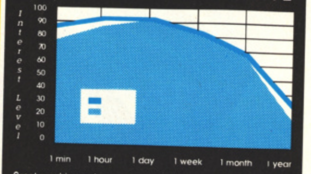
GRAPHICS	8	IQ FACTOR	8
AUDIO	4	FUN FACTOR	6

ACE RATING 917



C64: Between towers, you can shoot and catch fish for bonus points. Spectrum owners eat your hearts out!

PREDICTED INTEREST CURVE



Great graphics and gameplay give both versions real initial impact, but with only eight towers the fun can't last forever.

SKATE OR DIE

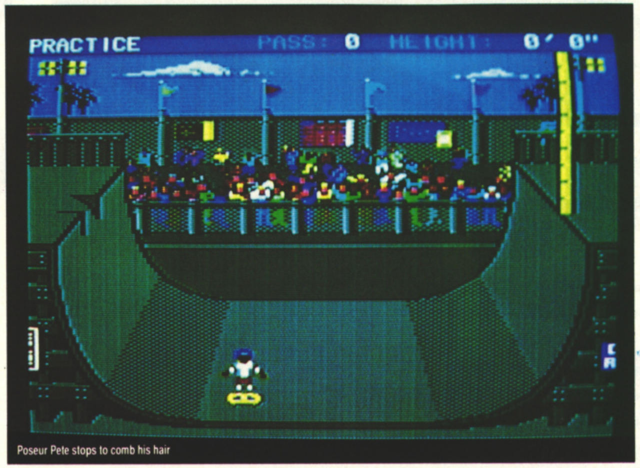
Ollies and plants with ELECTRONIC ARTS

PACK your pads, board and wheel grease and head on down to Rodney's skate shop. There you'll meet the coolest has-been in town – Rodney, of course. He sure knows how to handle his board. Can you say as much? If not, you'd better head for your local rag store and purchase Psycho Skateboards Daily, otherwise you'll end up as another pretty pattern on a board. Enter the mean city; skate or die.

If you intend leaving your mark on the city then sign in at Rod's shack. There's room for you and seven other competitors. Then it's either a practice roll round town or a head-to-head in five gruelling events. You're safer to stick to practise mode: after all you'd look a ripe prune if you hit the streets with a pink board and no hope of changing your image until five events later.

RELEASE BOX

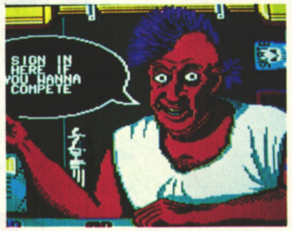
C64/128	£9.95 cs, £14.95dk	OUT NOW
No other versions planned		



Poseur Pete stops to comb his hair

Leave Roddy's parlour and cruise around six spray-painted streets; skate down the one with the event of your choice scrawled over it. The fun starts.

The first event – if you choose to compete in all five – is the Freestyle Ramp (a hundred feet of wood and steel moulded into a wide U-shape). Jump on your board and strut your stuff; ollies, Rock-n-Rollers and kickturns if you're hip (and if you can't figure out what they are, look at the Skater Speak box). But if you're really cool you'll also manage an open eye for the Betties. Try to be too flash and you will crash through the ramp – not a pretty sight.



Skater Speak

Aerial – the board is in the air during this move.
Bail – when you mess up and get ready to fall.
Betties – women.
Bio – spectacular skating.
Handplant – when one hand is on the board and the other on the ground.
Ollie – an aerial trick without the skater touching the board.

Next on the list is the High Jump: another U-shape ramp. Only this time you've got to waggle fast and hard to get you and your-board tens of feet in the air. A mean tournament, especially if you jump at the wrong moment.

Nothing is out to stop you in the third contest. It's just a casual jaunt in the Downhill Race; a race against time. On the way to the finish line you can go on, over, through and along objects. Stay on your board and gain a shower of points.

It's you against an opponent in an hilarious, mad dash to the finish line in the Downhill Jam. Anything goes: ride over flower pots, smash bottles and tip over trash cans. While doing this you must try and unbalance the other party by booting him in the head, stomach or other painful regions of the body. But also take care you don't slam into buildings or thunder through fences (you'll end up quartered if you do).

The last event, Pool Joust – in which two players enter, but only one comes out alive – is simple: one person moves rapidly round the rink trying to dodge the other stick-brandishing thug. If the first player manages to get from one side of the ring to the other, four times, without being hit then the stick is his. This carries on until someone gets splattered.

Skate or Die is highly entertaining and varied. The graphics and animation are exquisitely detailed; and the characters look in great pain when you do something wrong. By far the best in the recent skateboard game craze.

● Richard Monteiro

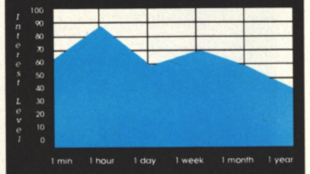
C64 Version

There are some stunning graphics and animation on show in *Skate or Die;* you really get a sense of the skateboarding life as the character you control jiggles around to stay on board. The action's accompanied by an enjoyable tune with some nice effects. You don't have to be Brain of Britain to compete... but who cares when it's such fun?

GRAPHICS	9	IQ FACTOR	4
AUDIO	7	FUN FACTOR	9

ACE RATING 878

PREDICTED INTEREST CURVE



Witty and entertaining. Skate and Die is good enough to merit a lot of return trips in the months to come.

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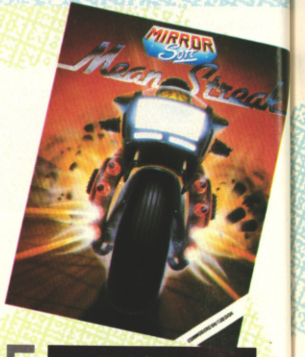
can you survive...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STATE OF ACTION

ACTION

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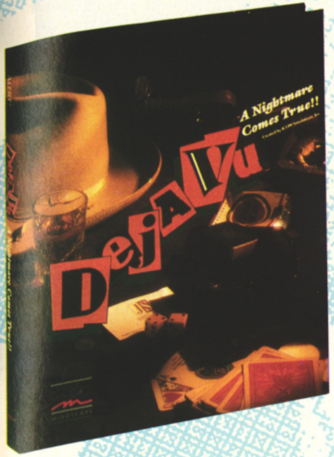
STATE OF MIND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Geopolitics in the nuclear age
by Chris Crawford

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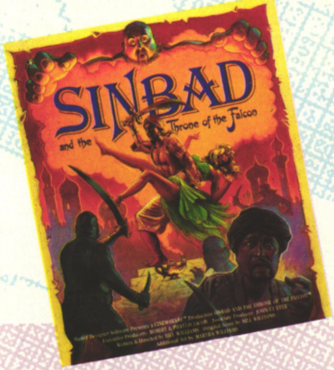
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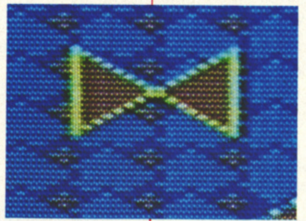
STATE OF ACTION

ZIGZAG

Ducking and diving with MIRRORSOFT

RAMMING a spaceship into objects in order to change its direction isn't generally considered a good idea. However, in this latest from Tony Crowther it's positively essential to go bouncing off things like a flea in a pinball machine.



The 'awesome' Matrix of Zog is where all the bone-jarring collisions take place, as you search for the eight crystals of Zog hidden in the 1,400 screens. At its simplest that's what the game is – just a matter of exploring and collecting. What makes it interesting is the weird way you get around and the many strange features encountered on the way.

You can fly left and right in a corridor and alter height as well, but you can't turn around or turn a corner without some assistance. Triangular blocks are placed at many junctions and by ramming them you can alter the direction of the ship through 90 or 180 degrees, depending on whether you hit the angled or flat part of the block. Ramming walls will also turn you around. Neither action causes any damage to the ship.

The corridors are populated by several breeds of nasty aliens. Homers home in on you, while attracters draw you towards them instead. There are also bouncers, drifters, corkscrews and cubes to look out for. Most of these guys can be deadly if rammed or if they hit you with their missiles. If you do die then you're returned to the starting position.

C64 Version

A tongue in cheek list of credits done movie style start things off, accompanied by some bop-along Crowther music. The graphics are OK but there isn't anything spectacular, although the scrolling is very neat. Sound effects are limited to blasting and explosions.

GRAPHICS	7	IQ FACTOR	5
AUDIO	6	FUN FACTOR	6

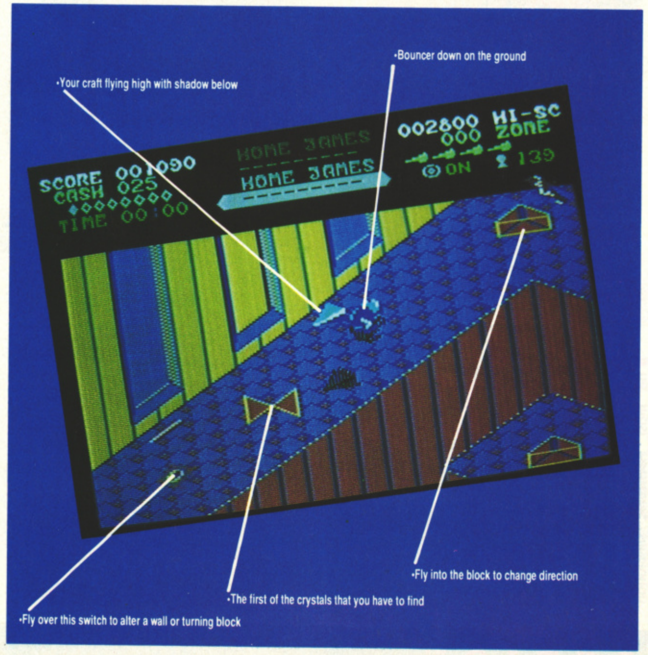
ACE RATING 783

RELEASE BOX

C64/128	£9.95cs, £12.95dk	REVIEWED

The matrix is viewed from a Zaxxon-type perspective, scrolling diagonally to keep the ship centred on the screen. The matrix is entirely composed of corridors connected by right-angled turnings. In places the corridors narrow and have ramps forcing the ship upwards.

Shooting the aliens earns money which can then be spent if you find a shop zone. They're found at the end of cul-de-sacs and when you fly into them it presents a menu of additional features for the ship. Each feature costs a varying amount of money, from U-turns at the cheapest level to extra lives at the most expensive. Other powers are zapps, maps, missiles, shield, raiser, infra-red and x-ray.


•Bouncer down on the ground
•Your craft flying high with shadow below
SCORE 001090
CASH 025
TIME 00:00
HOME JAMES
002800 HI-SC
000 ZONE
ON
139
•Fly into the block to change direction
•The first of the crystals that you have to find
•Fly over this switch to alter a wall or turning block

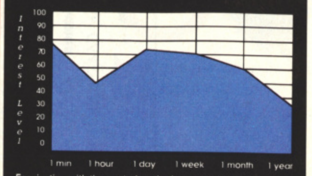
The maps show the zone you're in, infra-red and x-ray respectively enhance vision and allow you to see through walls. All the powers are useful to one extent or another but are lost if you die.

Other features which add to the puzzle nature of the game are switches that create or remove walls and blocks when flown over or shot. Additional restart points can also be found to prevent you having to fly all the way back from the start.

At first the concept is very intriguing, particularly as the features and their uses are discovered. But it quickly becomes a matter of exploration and zapping rather than one of puzzling. It's certainly a massive task to find all eight crystals and it's going to be a monster to map, but it may not hold enough surprises in the long run.

● Bob Wade

PREDICTED INTEREST CURVE



Fascination with the control methods turns to confusion as you ponder your task: once you discover what's going on it's plainer sailing

THROUGH THE TRAP DOOR

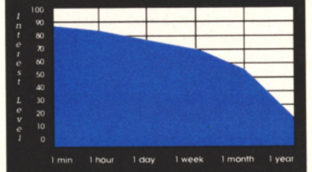
Cartoon capers from PIRANHA

BERK and Drutt, the two cartoon cuddlies, are back with a vengeance. *The Trapdoor* had you controlling the wonderfully animated Berk in the dingy corridors of the Bad Tempered Thing's castle. The sequel not only lets you manhandle larger-than-life Berk, but also his bouncing buddy Drutt. The adventure starts when hapless Boni (the skull) gets plucked from his abode, and subsequently taken to an underworld by a headless bat. Both Berk and Drutt must travel through four underground regions to recover their pal.

RELEASE BOX

C64/128	£8.95cs, £13.95dk	DEC 87
SPEC	£8.95cs	OUT NOW
AMS	£8.95cs, £13.95dk	DEC 87

PREDICTED INTEREST CURVE



Keeps you glued to the screen for a surprisingly long time

You have 16 lives with which to hunt for Boni. It sounds like a lot, but there are many hazards and you lose a life roughly every 90 seconds. Berk, the large blue thingamiwatsit, is the main character. Drutt just bounces around satisfying his craving for worms and occasionally, with great trepidation, gets Berk out of a hot spot.

The four regions are fraught with dangers and puzzles. There are pits, icicles, bats, and other menaces to dodge. The task usually involves locating a key and taking it to the nearest door – it is in this manner that you pass to the next stage.

As with the original, the graphics are bold and superbly animated. Berk's facial expressions have to be seen to be believed. And Drutt, who insists on gobbling every passing worm, is cute in his own special way. The tasks are harder than the original, but could still do with a little tweaking. A game worth getting if only to watch the big, bumbling characters.

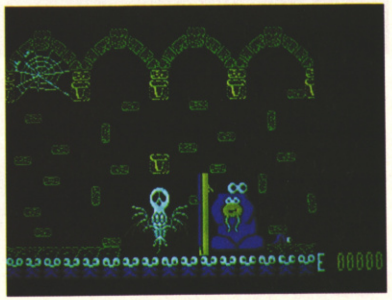
● Richard Monteiro

SpectrumVersion

There's some tremendous animation fo the large cartoon-like characters on the Spectrum. Sound is little more than the odd pleasing effect, but this doesn't really detract from the fun or the enjoyably tricky puzzling.

GRAPHICS	8	IQ FACTOR	6
AUDIO	5	FUN FACTOR	9

ACE RATING 824

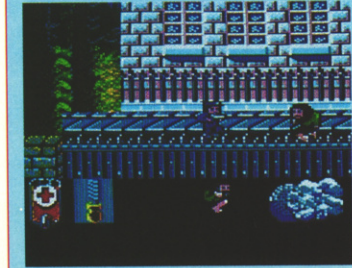


Berk and Drutt look on as the headless bat takes Boni off to the lower regions

WEREWOLVES OF LONDON

Fancy a bite of VIZ DESIGN's latest?

WEREWOLVES features sound effects which include that catchy song of the same name by Warren Zevon – and it will be this rather than any other aspect of the program which might tempt you back to the game.



There you are in werewolf guise looking for Sloaney blood

It's presented on the 'no instructions – work it out for yourself' format, but basically you must explore London, collecting potentially useful objects which will enable you to open manhole covers, or shine a light as you roam the sewers. By night you transform into a werewolf and attempt to keep your levels up by attacking people.

As far as gameplay goes, there's an awful lot of trotting about screens which all look exactly the same. The objects may be useful in the end, but at first you need to work out what they are – a swiss roll, electric toothbrush? – as the graphics are certainly not all they should be, and animation perfunctory.

● Christina Erskine

RELEASE BOX

AMS	£9.99cs, £14.99dk	OUT NOW
SPEC	£8.99cs	DEC 87
C64/128	£9.99cs, £12.99dk	DEC 87

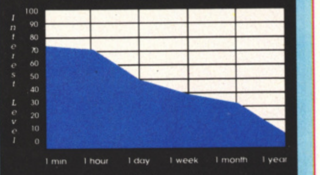
Amstrad Version

Despite the nice touches – eating Sloanes can be good fun – Werewolves just doesn't have the depth or the interest to make the grade.

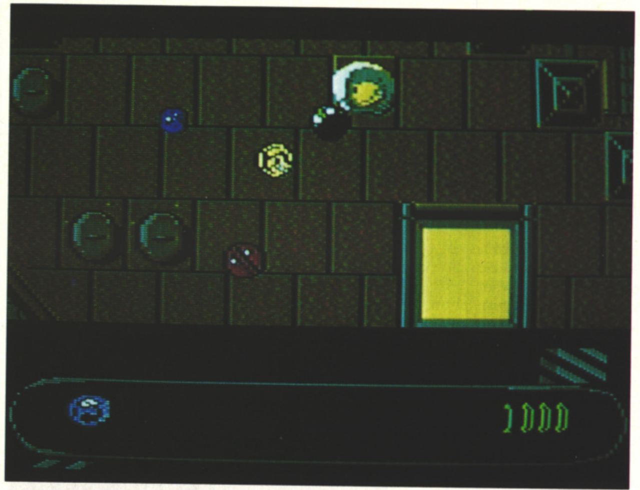
GRAPHICS	6	IQ FACTOR	5
AUDIO	7	FUN FACTOR	5

ACE RATING 573

PREDICTED INTEREST CURVE



The lack of depth makes it difficult to maintain any long-term interest



Dust Brain has already captured one madball and now he's after a green and black one. Nearby are an egg and a large yellow trampoline.

MADBALLS

Battling balls bounce in from OCEAN

MERGER, compromise, elections and voting are unknown terms on the planet of Orb. If you want political power then you're going to have to get out there and bash a few balls around to get it. After all, you're a Madball and that's what you dc best.

As in all political struggles there's more than one candidate for the post of leader. There are seven other Madballs doing an excellent impression of the SDP leadership struggle, as well as a pack of Beaurocrats doing a tiresomely good job of getting in the way and generally fouling things up for you.

RELEASE BOX

C64/128	£8.95cs, £12.95dk	REVIEWED
SPEC	£7.95cs	IMMINENT
AMS	£8.95cs, £14.95dk	IMMINENT

Madball Roll Call

There are eight candidates for leader of Orb. These are their credentials:

	A	B	C	Food
Freeky Fullback	1	8	6	Coke and melons
Swine Sucker	2	7	8	Anything
Slobulus	3	6	7	Fish heads
Dust Brain	4	5	5	Blood
Fist Face	5	4	2	Bones
Horn Head	6	6	7	Cabbages and fruit
Skull Face	7	1	1	Cabbages
Screamin' Meemie	8	2	3	Coke

A= Speed B= Strength C= Hunger

The surface of Orb is a brown complex of interlinked platforms, surrounded by a sea of grey conformity. The multi-directional scrolling view is from overhead, so the balls get larger and smaller, as they bounce up and down. The Madball sprites are recognisable mainly by their colours, but the facial features aren't quite distinctive enough to differentiate them.

Initially you are in control of Dust Brain, a mid-range Madball in terms of speed and strength. The other seven MB's (Member of Ball-iment) have equally flattering names like Swine Sucker, Slobulus and Freeky Fullback. They have different speed and strength ratings which affect their manouverability and performance in combat.

A spinning pole (opinion poll?) indicates a ball's energy level, which is supplemented by bouncing on items of garbage that pass for food on Orb. Running out of energy won't kill the ball but it does make him more vulnerable to attack.

To capture another ball you simply have to bump him off the platform and into the grey area – the goal. You can do the same to the beaurocrats for points. Once a madball is captured you can switch control to it at open dustbins. It will also come into play if you get bounced into the goal, acting as an extra life.

There are several areas in the game, and only one ball will be found in each. The areas are connected by yawning holes which you can bounce down, exiting into the next area via a dustbin.

To bring some variety to this tough political lobbying there are many features that affect the ball. Trampolines, springboards, tyres and catapults can all give you extra bounce to clear gaps, but using them directionally is often difficult. Ramps, pyramids, dustbins and oil slicks can send you spinning off course and into danger.

One cute and totally inexplicable feature is the fried eggs, which, when bounced on, release chickens who can be squashed for bonus points. Bubbles come in for similar treatment with the same bonus points result. However, whatever you do, don't bounce on the mousetraps or your political career will deflate faster than Cecil Parkinson's.

The gameplay is absolutely manic as you find yourself fighting the joystick the whole time trying to stay in play or bounce an opponent out. This makes it addictive and infuriating, a deadly combination because you keep having one more go and get more frustrated every time you die. Something has to give eventually – the joystick, the game, your mind...

The main drawback is the element of frustration at dying and having to repeat conquests of the other balls. It's not a serious problem, but along with the drab graphics it takes the edge off the game. I conclude that there is only one difference between Earth and Orb politics – one has party political broadcasts that put you to sleep, the other will give you many sleepless nights.

● Bob Wade

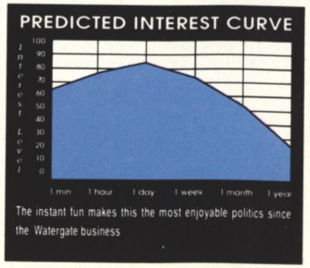
C64 Version

The graphics are disappointing, lacking colour and detail. The backgrounds are drab and the Madballs are fuzzy faced so that they lack personality. But the spot sound effects are wonderful: a different bounce noise for every ball and terribly plaintive noises from the poor chicken.

GRAPHICS	5	IQ FACTOR	2
AUDIO	7	FUN FACTOR	9

ACE RATING 826

PREDICTED INTEREST CURVE



The instant fun makes this the most enjoyable politics since the Watergate business

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AIRBORNE RANGER

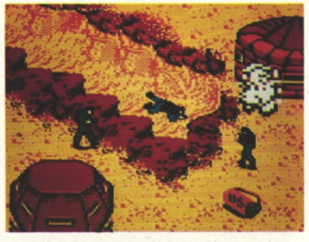
Hit the silk MICROPROSE style

HAVE you ever fancied yourself as an elite soldier operating behind enemy lines for the U.S.A ? If so, then now's your chance.

Microprose will fly you into enemy territory where you can parachute behind enemy lines and attempt to complete a number of hazardous missions varying from capturing enemy officers to cutting enemy gas supplies.

The general idea is to fly over enemy territory, drop supply pods that you may need during the operation, then when the light turns green, launch yourself from the aircraft and guide your parachute to the ground. This part of the game is viewed directly from above and only lasts a few minutes, but once you touchdown the view changes to show your ranger in the middle of a screen which scrolls around him as he runs, walks and crawls on his mission.

Action Man!



Crawling through trenches under fire from machine gun emplacements is not everyone's idea of fun. Good job it's only a simulation.

From here on in it's up to the player to complete the mission and make his way to the pick-up point to be rescued. Of course the enemy have been alerted and will be hunting you down, so quick reactions are needed in order to survive. Controlling the character involves moving him in one of eight directions, while he can fire in any one of 32 directions.with a choice of weapons. Replenishments are available – if you can ever reach the supply pods.

Airborne Ranger is not one of those instantly playable *Commando*-style jobs, but a game which takes a while before the fun begins to shine through. When you do get the hang of it, it can become a gripping and demanding task.

● Andy Smith

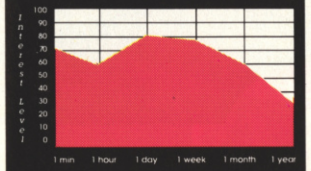
C64 Version

Ranger boasts some crisp and colourful graphics. the gameplay is tough to get to grips with but does become easier with practice. The ability to save positions and character qualities means you can volunteer to fight a campaign and hope to get your character promoted to Colonel. You'll find yourself in some pretty tight spots which require a quick trigger finger, while at other times you'll need to think on your feet and work out your plans very precisely.

GRAPHICS	8	IQ FACTOR	5
AUDIO	7	FUN FACTOR	7

ACE RATING 801

PREDICTED INTEREST CURVE



Gameplay is pretty demanding to start with, but it picks up as you get to grips with it and then holds you for quite some time.

RELEASE BOX

C64/128	£14.95cs, £19.95k	OUT NOW
SPEC	UNDECIDED	FEB 88
AMS	UNDECIDED	FEB 88
ATARI ST	UNDECIDED	FEB 88

PHOENIX

INFOGRAMES dodge the black holes

NAVIGATING the space lanes and shooting the occasional gun turret may sound like boring stuff, especially where the lanes in question are flat or tubular lattices of oblong tiles. But when large holes and other lethal obstacles are the rule rather than the exception – and you can't slow down to avoid them – boredom is unlikely to be one of your problems.

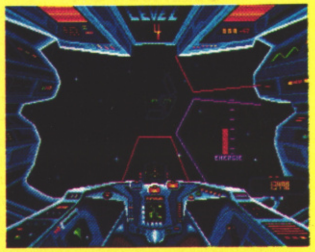
Frustration, on the other hand, certainly will be.The only way to stay alive in the game is by dodging from one row of rectangles to another as the whole lattice zooms towards you. The vectors here are slick and the feel of movement is mostly convincing, but the strict pilot's eye view – your ship isn't visible on the screen – causes a few problems judging where your ship actually is.

Telling which row you're on is easy – the lattice rotates or moves sideways under you as you push left or right on the stick so as to keep you central – but telling how far you've got along the tile you're on is another matter. Swing left or right before there's a tile alongside you and you're dead. Run off the end of a tile into blank space because you waited too long and again you're dead. The timing isn't actually too tight, but you've got an awful lot of steering to do and you're back to the start of the level every time you die. Since you've only got three lives anyway, this clearly isn't going to be a picnic.

There are other hazards aside from blank space: purple tiles and lashing tiles kill you outright, as do gun turrets if you ram them; light blue tiles and shots from gun turrets drain your energy; and green tiles send you out of control for a few precious seconds. It's not enough to dodge these though – you've also got to positively seek out the orange tiles that top your energy up.

Later features add complications – black holes are particularly nasty – but the overall game remains simple, addictive fun

● Andy Wilton



Those red tiles keep your batteries toppped up, so it's worth your while going for them.

RELEASE BOX

ATARI ST	£19.95dk	OUT NOW

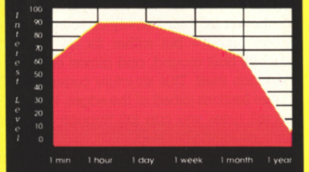
Atari ST Version

Nice vector graphics, if not exactly smooth. The flashing squares are almost impossible to make out, but that's right in keeping with such an irritatingly playable game.

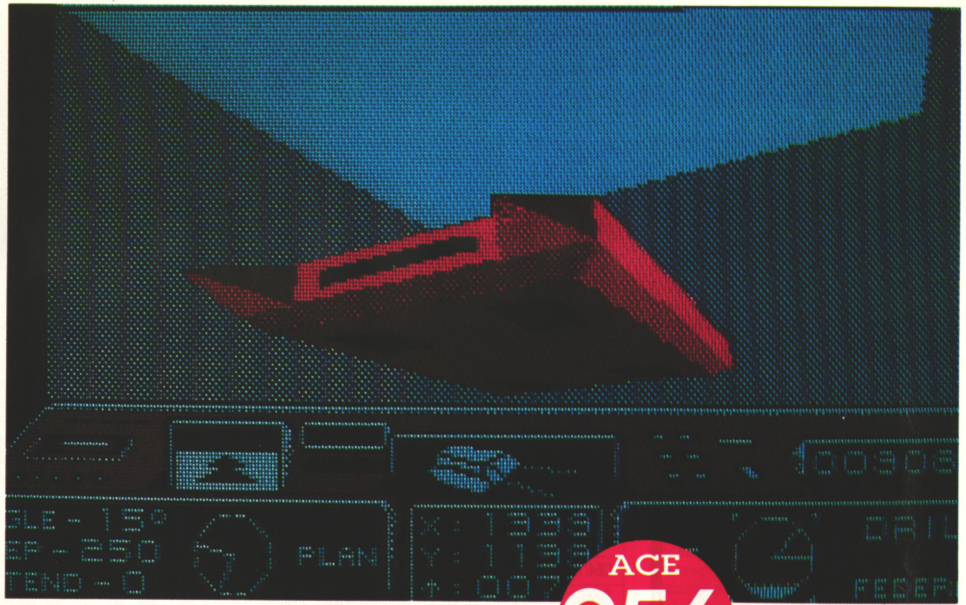
GRAPHICS	8	IQ FACTOR	5
AUDIO	7	FUN FACTOR	7

ACE RATING 887

PREDICTED INTEREST CURVE



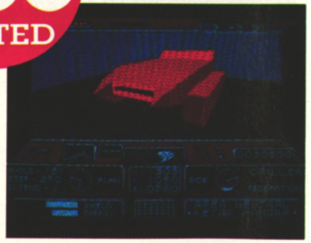
Initial frustration vies with graphic polish. but it's addiction that wins through in the end



Amstrad: You've found the spotter plane inside its hangar. Dock with it and you can take to the skies!

ACE 956 RATED

DRILLER



Amstrad: You're in the jet now, looking back at the excavation probe.

Solid exploration from INCENTIVE

GAS build-ups are no laughing matter – not when they're threatening to blow up one of your home planet's moons, at any rate. The debris from the explosion would make rather a hole in everybody's lifestyle, so you've got to get up there and prevent that big bang by setting up drilling rigs and siphoning off the gas. It's a race against time to find the gas pockets, and there's a lot you'll have to work out for yourself.

The playing area isn't the actual lunar surface – that's far too hostile an environment even for your heavily armoured excavation probe – but rather it's an artificial structure built around, and almost encasing, the moon itself. This structure consists of 18 square sections joined at the edges, but there are still holes you can fall through so you'll have to watch your step.

As you explore the buildings and objects to be found in each section your driver's-eye view of them is in true perspective 3D, with solid colour or texture-filling used on all surfaces. Especially where textures are used, it's not always entirely clear what distant or small objects actually are. The solution's simple here: just trundle up to them and take a look. Tiny dots become cubes or pyramids on closer inspection, and seemingly connected buildings turn out to have narrow – but navigable – alleyways in between.

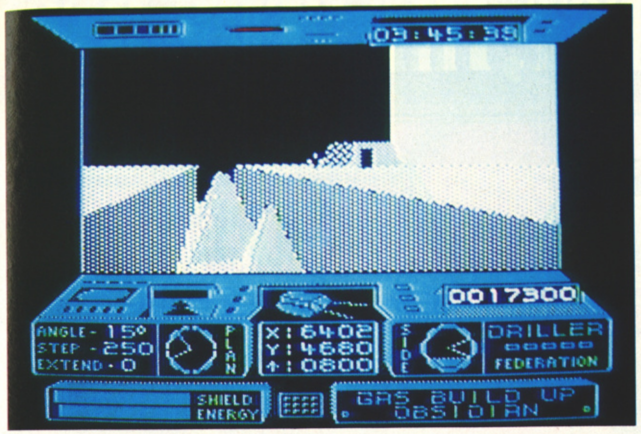
RELEASE BOX		
C64/128	£14.95cs, £17.95dk	DEC 87
SPEC	£14.95cs, £17.95k	OUT NOW
AMS	£14.95cs, £17.95dk	OUT NOW

At first you'll simply want to explore the moon. This is a tough enough task to be getting on with: though there are obvious doorways to adjoining sections or into buildings right from the word go, you'll need to find or create others. There's more to this than trundling around and looking: you'll also have to identify various switches, and shoot them with your laser cannons to trip them.

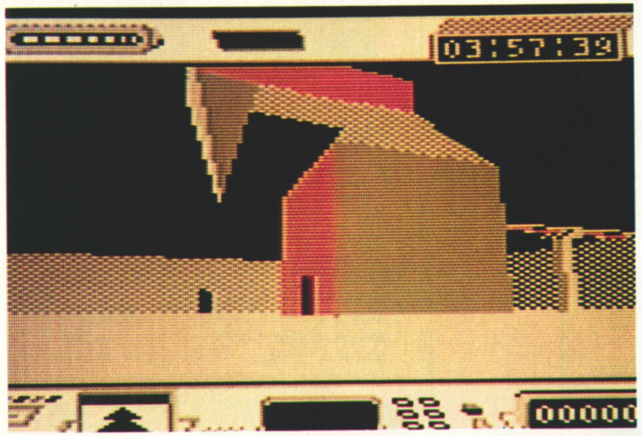
Often switches don't directly create the results you want: some work in groups so you'll have to set all the switches correctly before anything useful happens, while others simply reveal further switches that were previously invisible. There are no general principles here – just shoot and observe.

As you might already have guessed, you aren't the only one who gets to do some shooting. The moon's abandoned security system is still in working order, and its static laser turrets can subject you to withering fire if you stray into their field of view. Fire back and you may knock them out or at least impair them before they drain your shield and destroy you, but some turrets are cannon-proof. You may have to search for another route through here, or simply grit your teeth and run the gauntlet.

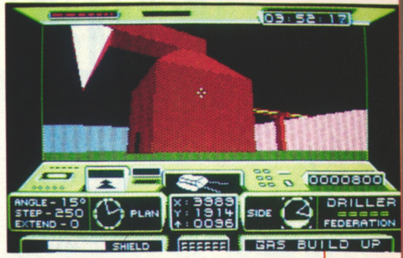
Turrets aren't the only hazard at that. An orbiting killer satellite will fire down on you if it gets the chance, while minefields and acid rivers make some routes decidedly dangerous. Large drops can wreck your probe even if they don't plunge you onto the moon below, so simple trenches can't be taken lightly either.



Spectrum: A view from the bridge — impressive even if it is only in mono.



C64: Not a finished version, but these graphics should give you an idea of what to expect.

1


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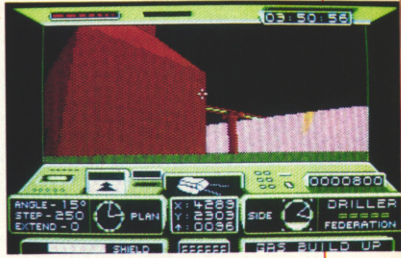

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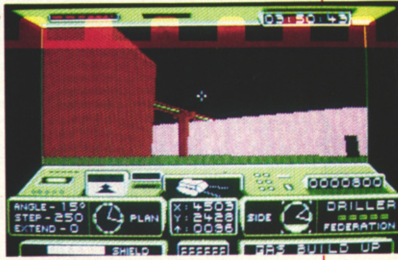


1: A well defended building — that white pyramid is a gun turret covering the entrance, and shooting it won't get you anywhere.
2: Let's head round the back. Maybe there's a rear way in...
3: ...or maybe those power lines have got something to do with it.

Once you've explored the moon, with the help of the energy and shield crystals around the place, you still have to address the central problem of venting the gas. Positioning drilling rigs is child's play – just teleport them in from your home planet at the press of a key – but you have to know where the gas pockets are. The landscape contains all the information you need, but much of it is in cryptic form – symbols on the ground, messages on walls etc – so you'll need to have your brain in gear.

The realism of the *Driller* playing area lies not just in the solid 3D graphics used to depict it, but also in the very adventure-like way you can think things up, do them and find they work. There's so much to do beyond the normal: if you find the switch to get the moon's teleport network running, can you work out how to trip it? If you find a spotter plane to fly around in, can you keep it airborne?

Fitting *Driller* into a pigeonhole is tricky. There are arcade, adventure and logical puzzling elements to the gameplay, while the slow-but-impressive graphics hang some where between *Starstrike II* and *The Sentinel*. It's bold, dazzlingly original and very playable too, and it deserves to feature prominently in the Yuletide charts.

● Andy Wilton

Amstrad Version

Hard to believe you're only looking at a CPC display, what with the realism this one wrings out of it in places. It may take its time updating the screen, but it's worth the wait.

GRAPHICS	9	IQ FACTOR	8
AUDIO	4	FUN FACTOR	5

ACE RATING 956

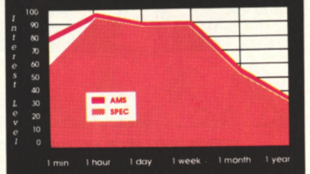
SpectrumVersion

It may only be in mono, but the textures used in the display are still very effective and the screen redraws at a healthy speed making the game that much more playable.

GRAPHICS	8	IQ FACTOR	8
AUDIO	3	FUN FACTOR	5

ACE RATING 931

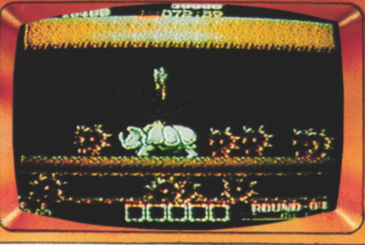
PREDICTED INTEREST CURVE



The Amstrad's colours give it more instant appeal, but both versions will enthrall you once you start to explore the game a bit.

THE BEST, THE VERY BEST AND NOTHING BUT THE BEST

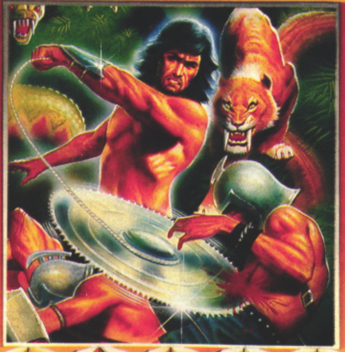
RYGAR



From the dawn of time comes a legendary warrior to thrill players everywhere... Rygar! A warrior who respects one code alone, the code of combat. Antagonistic gladiators, reptiles, mammals, monsters, creatures of magic... Come one, come all, come to meet the might of the fearless Rygar and in the words of the immortal warrior – LET'S FIGHT!!!

CBM 64/128 £9.99t £14.99d
Amstrad £9.99t £14.99d
Spectrum 48/128K £8.99t

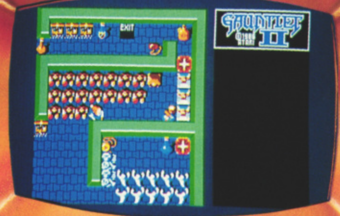
TECMO™



SCREEN SHOT FROM ARCADE VERSION.

U.S. Gold Ltd., Units 2/3 Holford Way, Holford, Birmingham B6 7AX. Telephone: 021 356 3388.

GAUNTLET II*™



The mindblowing sequel to the No. 1 smash hit! Addictive, frantic and packed with so many new features it's a totally new game. Gauntlet II is not just a further episode in this enthralling crusade, it is a whole new experience in action packed adventure

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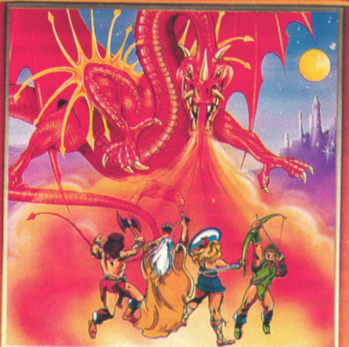

SCREEN SHOT FROM ATARI ST VERSION.

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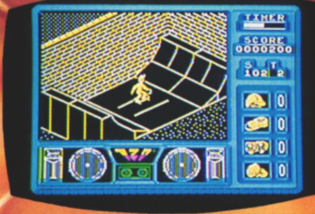
720°*™



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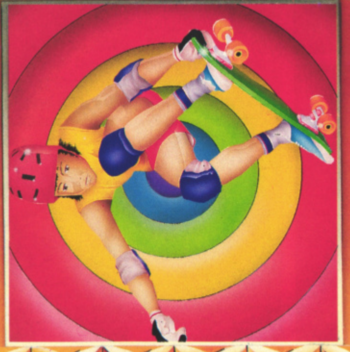

SCREEN SHOT FROM SPECTRUM VERSION.

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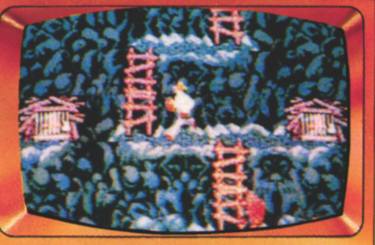
INDIANA JONES and the TEMPLE OF DOOM™



Pick up your trilby and trusty bullwhip and don the mantle of the legendary Indiana Jones! Prepare yourself for your most dangerous adventure yet – to storm the evil Temple of Doom and rescue the imprisoned children and the magical stones of Raa! You will call on all your reserves of courage, strength and skill. Push yourself to the limit, ride your luck and the magical stones may just be yours.

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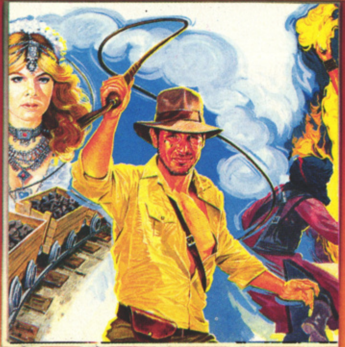

SCREEN SHOT FROM ARCADE VERSION.

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YOU WONDER WHY OTHE COMPANIES EVEN BOTHER...

Coming early 1988 HALLS OF KYROS (SEGA), ROLLING THUNDER (NAMCO) ROADBLASTERS (ATARI GAMES)

BUGGY BOY

ACE 906 RATED

Are ELITE buggin' you?

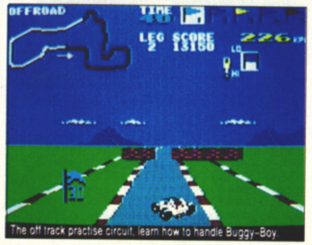
FORGET the Ferrari – *Buggy Boy* puts the player behind the wheel of an off-road, race-tuned Baja Buggy.

The game is viewed from a position behind and slightly above the buggy. The aim is to complete one of five courses by completing the various legs that make them up. The roadway scrolls towards the player, continually twisting and turning so that the player has to move the joystick to avoid the various obstacles. Of course, you're racing against the clock on each leg – much like *Out Run* – and failure to reach the check point means it's time to start all over again. Besides the almost obligatory time limit, the player has to fight to avoid a plethora of road-side and on-road obstacles including trees, brick walls, fences and the occasional other buggy. Hitting an obstacle will have your buggy leaping into the air and coming down with a thud – you then have to pull away from a standstill and try to get your speed back up again before you lose too many valuable seconds. As well as crashing, the player can also witness his buggy flying through the air whenever he hits a bump and going up onto two wheels whenever he hits a molehill or a tree stump – this two wheel business is actually quite helpful for steering for through tight gaps.

Almost as an afterthought, the player can attempt to increase his score by driving the buggy through various gates and over a number of flags. Also included are time gates that give you a two second bonus for the second leg.

Buggy Boy is non-stop action that is fun to play; and it's difficult enough to keep even the best drivers engrossed for quite some time.

● Andy Smith



The off track practise circuit, learn how to handle Buggy-Boy.

RELEASE BOX

C64/128	£9.95cs, £14.95dk	OUT NOW
SPEC	£7.95cs, £14.95dk	JAN 88
AMS	£8.99cs, £14.95dk	JAN 88
ATARI ST	£19.95dk	JAN 88

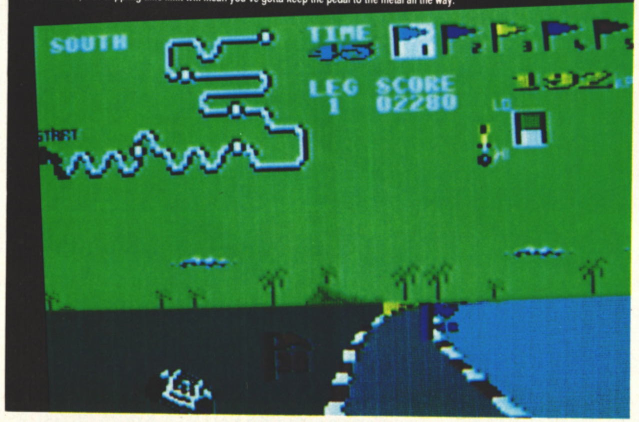
Buggy Boy – what's new?

So you thought *Out Run* was the definitive car racing game and anything that bears even a passing resemblance to it was bound to be a poor substitute ? See *Buggy Boy* and then decide. Sure, the idea of completing several stages within a time limit appears in both games but that's where the similarity ends. *Buggy Boy* is far more concerned with picking your course and avoiding the obstacles than merely completing a course. In *Out Run*, you had cars to avoid, but *Buggy Boy* has the player risking far more in an attempt to drive through bonus gates; this can prove to be tricky until you get to know the course and will have the player running into an immovable object on more than one occasion simply because his greed for points has overridden his common sense.

The inclusion of on-road obstacles is also a cause for concern. Hit a log and the buggy goes flying through the air – great fun to watch but should it happen on a corner then you could be in for a lot of trouble, because you can't steer a car that's in mid-air. *Buggy Boy* is different enough to merit a high level of interest from even the most ardent *Out Run* fan.`

Oh Boy!

Burnin' rubber, that crippling time limit will mean you've gotta keep the pedal to the metal all the way.



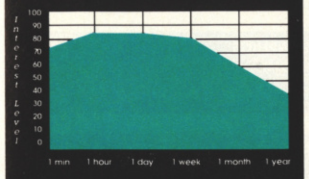
C64 Version

Although the scrolling is a bit poor, the graphics are very colourful and well drawn. Sound is great – throbbing engines throughout. It's not cerebral stuff, though memorising the courses can help. It's certainly instantly playable and very addictive, with the variety of course and legs providing much lasting interest.

GRAPHICS	7	IQ FACTOR	3
AUDIO	8	FUN FACTOR	8

ACE RATING 906

PREDICTED INTEREST CURVE



Instant fun. Once you've learnt the different courses you can put your brain in neutral and enjoy the game's playability

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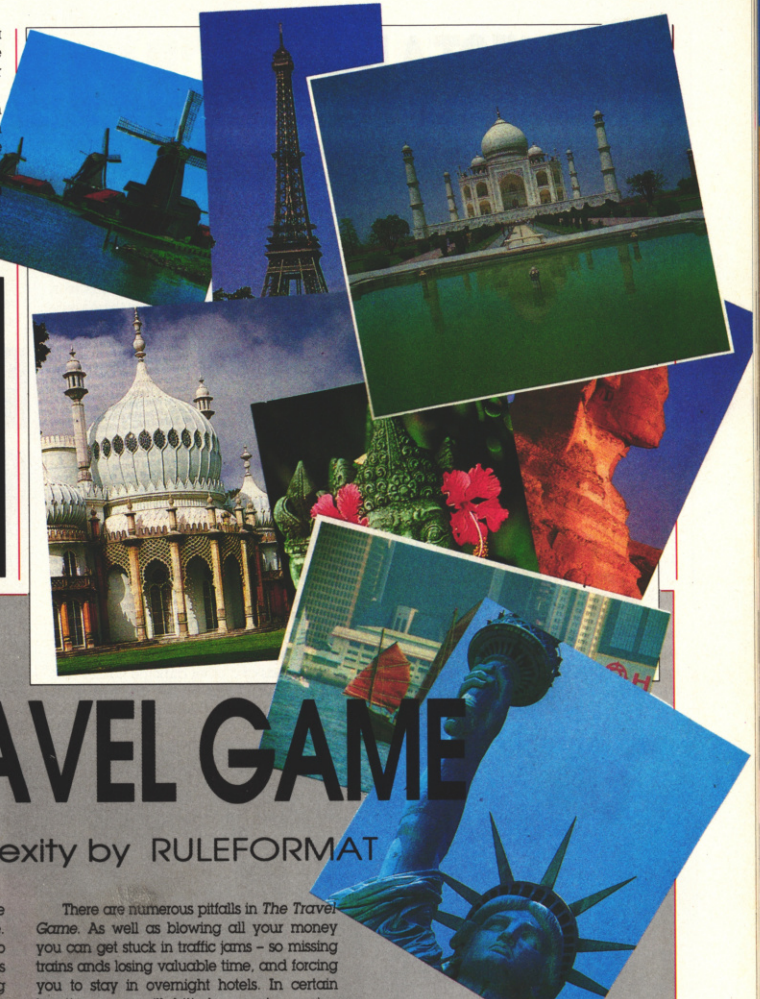


THE TRAVEL GAME

Peripatetic perplexity by RULEFORMAT

PSST! Wanna see the world? Go to all the best airports? Get about on all the best railways? Give yourself a chance of picking up at least £5,000? And play a jolly entertaining quiz game at the same time? Yes?

Then look – as they say – no further; *The Travel Game* will be right up your street. The ultimate object of the game is to solve an 'Endgame Puzzle'; get this right and you stand a chance of winning that prize — £5K plus £1 per copy of the program sold. However, you only stand a chance of getting the pieces of the endgame puzzle by travelling the world to the right places.

And, of course, you can only go places by buying tickets. In *The Travel Game* you earn the money you need by answering questions, which is where the quiz element comes in. Describing the first steps in the game is probably the best way of giving an idea of what goes on.

RELEASE BOX

IBM PC	£24.95dk	OUT NOW

The program is available only by mail-order from Ruleformat 051-708 8202

You begin in London with a clue to the first destination you must reach; a musical clue. When you've figured out that this place is Dublin you then have to get there. You have to go to a travel agent's, buy a ticket and get to the airport (in time).

When you reach Dublin (or anywhere else, come to that) you should go to a shop and buy a souvenir. If you're lucky you'll be given a question which – if answered correctly – will give you a part of the endgame puzzle. Entering 'Display destination' will give you a clue to the next stop you must make. The destination clues are generally none too difficult to work out; what can be tricky is actually getting there. The logistics of getting from A to B (very often via D, Q or even X) are a large part of the fun and the frustration of the game.

The other part of the fun comes from earning the money wherewith to voyage. You go to a shop and buy a question for anywhere from £10 to £50; answering it correctly can bring you large amounts of cash. Getting it wrong means you lose your stake. There's a wide variety of questions, ranging from logical/mathematical puzzles through word squares and recognising quotations. The cheaper ones can be fairly easy, the expensive ones fiendishly difficult.

You need to accumulate money in order to travel – tickets from Paris to the Middle East don't come cheap. But, you may well be wondering, what do you do if you run out of cash? Beg. It's demeaning to wander round Paddington station trying to raise the cash to buy a cheap question, but it's the only way and it does work; eventually you get enough to start trying to accumulate more cash.

There are numerous pitfalls in *The Travel Game*. As well as blowing all your money you can get stuck in traffic jams – so missing trains ands losing valuable time, and forcing you to stay in overnight hotels. In certain locations you will bitterly regret carrying your stash in cash rather than travellers' cheques; it's not pleasant to be mugged and left penniless on the streets of an alien city.

The overall object of the game, of course, is to collect and answer all parts of the Endgame puzzle and give yourself a chance of winning the £5,000. But on the way you can have plenty of fun playing the quiz elements and just getting around. *The Travel Game* can become engrossing and exciting, whether played on your own or as part of a syndicate. Remember, though, that only one prize entry per disk can be submitted.

● Pete Connor

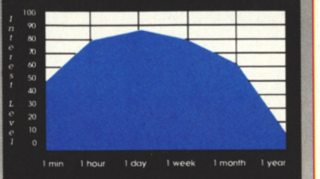
IBM PC Version

Don't buy the game if pretty graphics are what you want; there are none. *The Travel Game* is all about voyaging fun and puzzlesome questions. The user interface could have been a little friendlier, but once you get used to it it's not too much of a problem.

GRAPHICS	0	IQ FACTOR	10
AUDIO	5	FUN FACTOR	9

ACE RATING 838

PREDICTED INTEREST CURVE



Will really keep you hooked until you solve it – or win that £5,000.

BRAVESTARR

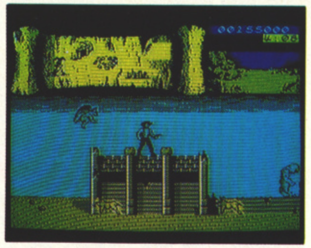
GO! west young man

FRONTIER planets like New Texas attract some pretty lowlife types, so local lawman Marshal Bravestarr (that's you) has his work cut out for him. That goes double right now, with the wise old Shaman held prisoner by evil Tex Hex and his gang. It's curtains for the Lone Star planet if you can't rescue Shaman, so you'd better get onto Hex's trail *muy pronto* .

RELEASE BOX		
C64/128	£9.99cs, £11.99dk	DEC 87
SPEC	£8.99cs,	OUT NOW
AMS	£9.99s, £14.99dk	DEC 87

You can run up and down the town's scrolling, side view main street fighting off bad guys with your trusty six-shooter, or drop into any of the town's named locations - the jail, bar or bank for instance - in search of information. Once you're inside a menu system lets you examine the place or talk to anyone there. The bar's your best bet for info, but you'll need money there - and for that you'll have to head out of town.

Climbing aboard your flying saddle, you can select your destination from the onscreen map and take to the skies. At first there's only one out-of-town location, but as you talk to people and gather clues the map starts to fill in. You'll have to blast your way through the tumbleweeds and other airborne nasties that swarm at you, and when you arrive it's another round of talk-and-examine.



Marshal B's in a ghost town, searching for the Hex gang: that's him standing on the roof.

There's an overall time limit to the game, and the clock can run down quite quickly if you keep taking serious hits. Tokens left behind by dead nasties can increase your rate of fire or even stop the clock briefly, but avoiding the bad guys is far too difficult. *Bravestarr's* a valiant effort at something new, but innovation's no substitute for playability.

● Andy Wilton

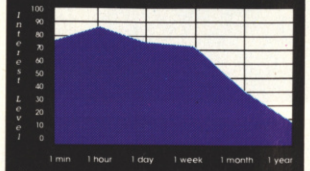
SpectrumVersion

Nice use of colour and not too much attribute clash either, But the gameplay's frustrating stuff.

GRAPHICS	7	IQ FACTOR	3
AUDIO	4	FUN FACTOR	5

ACE RATING 775

PREDICTED INTEREST CURVE



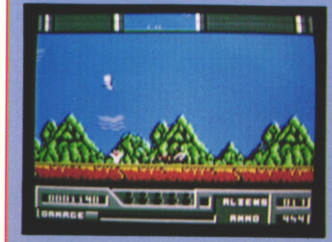
New locations help keep you involved. but the action soon gets frustrating

R.I.S.K.

Scroll and shoot to THE EDGE

RAPID Intercept, Seek and Kill – just in case you were wondering what the initials stood for. Jump in your skimmer craft and fly over the surface of the planet Christon 3 in an attempt to save your Space Weapons Research Establishment from the alien invasion.

RELEASE BOX		
C64/128	£8.95cs, £12.95dk	OUT NOW



Those gesticulating chaps need your help – so do try to avoid running them over.

This side-on viewed scroller starts with the player selecting a sector to explore before climbing into his craft and setting off to clear said sector of aliens. All the action here takes place over ground where the occasional small character can be seen running along the surface waving his arms. These chaps are your boffins and should be rescued and returned to Homebase.

Having rid the sector of aliens it's then time to head under ground into what's commonly known as The Tube. Here your ship scrolls continually from left to right and the player has to guide the craft gently onto one of three platforms containing supplies. Deciding which platform to go for depends on your flying skill and your thirst for supplies, the amount of which increases with each platform you pass.

Rescue some boffins and retrieve some blueprints and you're able to have add-ons (such as anti-gravity devices) built and fitted to your ship – a life of fighting aliens then becomes easier to live. *R.I.S.K.* is sufficiently different from yer average scrolling shoot 'em up to keep you fixed to your screen for some time.

● Andy Smith

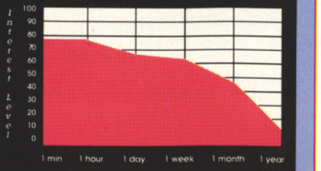
C64 Version

The backgrounds and characters in *RISK* are all very well drawn and colourful. The scrolling is particularly attractive. Gameplay is a little tough to at first.Your ship seems to be affected badly by the planet's gravity, but building yourself some extra parts sems to solve the problem. It's not mind-stretching stuff (was *Defender*?) but it's good and playable while it lasts.

GRAPHICS	8	IQ FACTOR	3
AUDIO	7	FUN FACTOR	6

ACE RATING 709

PREDICTED INTEREST CURVE



The colourful graphics will hold you for a while. but you'll have seen most of it after a month or two. That won't stop you loading it up for the odd blast at some future time though.

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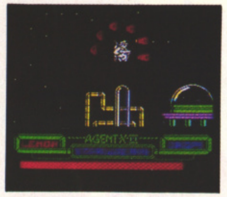
AGENT X2

MAD pop the pimple



ZITS are what this simple but cleverly executed shoot-em-up is all about; one of the many mad professors who abound in computer games is about to unleash his Zit Ray on an unsuspecting world; your task as Agent X is to stop us all from breaking out in terminal acne.

The game is a 3-parter; the first is a horizontally scrolling blast, the second a vertically scrolling one and the third is where you bust through a wall to get at the mad prof himself.

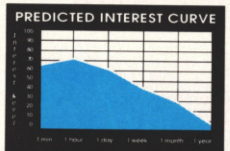
It's very nicely done, but does tend a little toward the repetitive – with the addition of the hypnotic and otherworldly sound track you can find yourself drifting off in to a zombie-like shoot-em-up trance. Graphics, too, are sweet, if unexceptional.

● Pete Connor

RELEASE BOX

C64	£1.99cs	OUT NOW
AMS	£1.99cs	DEC 87
SPEC	£1.99cs	DEC 87

PREDICTED INTEREST CURVE



ACE RATING 616

HYBERBLOB

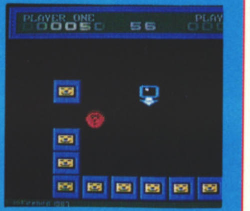
Blob minding with FIREBIRD

BLOBPODS are among the most stupid creatures in the universe, and controlling them on their outings is your thankless task in this very simple, very clever and very enjoyable cheapie.

The Blobpods are circular bouncing faces who have to bounce their way from one end of a row of cubes to the other. Unfortunately, there are gaps in the row, down which the Blobs will disappear – unless you can be quick with your stick and move cubes in to the vacant space. Sounds dull, but it can become frenetic as you try to fill thre gaps with a swarm of the stupid creatures bearing down on you.

With 100 levels – which don't start any too easy – there's a lot of fun to be had. It's all basically the same thing, but the thing is fun, so who cares?

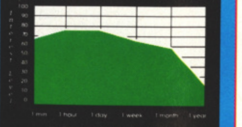
● Pete Connor



RELEASE BOX

C64	£2.99cs	OUT NOW

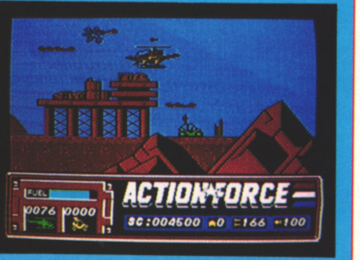
PREDICTED INTEREST CURVE



ACE RATING 783

ACTION FORCE

Join VIRGIN and shoot Cobra



VIRGIN'S Gang of Five programming team has a deservedly high reputation, which, unfortunately, is unlikely to be furthered with *Action Force*.

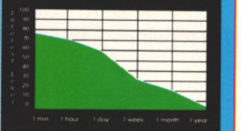
In this game of the toy, you control a Dragonfly helicopter blasting the skies in order to protect a C5-type buggy on its way to crack the enemy computer base. Along with indiscriminate shooting (turn on that autofire) you must also winch up bridges and drop them so that the AWE Striker buggy doesn't fall down craters and shoot out electrical fence installations. Some nice graphics and fast action, but the interest palls fairly quickly.

● Christina Erskine

RELEASE BOX

C64	£9.95cs	DEC 87
SPEC	£9.95cs	DEC 87
SPEC +3	£14.95dk	DEC 87

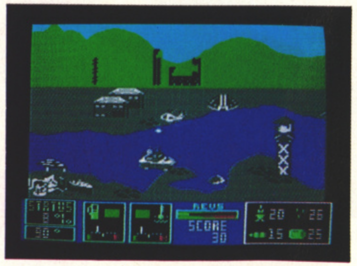
PREDICTED INTEREST CURVE



ACE RATING 543

GUNBOAT

PIRANHA mess about in boats



SPLASH bang, wallop, is the order of the day in this watery shoot-em-up. Get out on the river in your hunter-killer and shoot everything in an attempt to 'penetrate the complex network of inland waterways held by the enemy'. You can fire missiles, torpedoes, shells or drop depth charges – which accounts for just about every type of enemy you'll encounter.

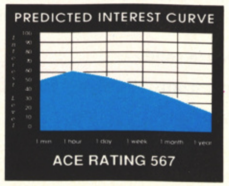
There's a choice of routes to take, but wherever you go you'll find that the going is pretty tough – so tough tha's it's pretty hard to even get going at the start of the game. The rather drab and old-fashioned graphics on this C64 version don't help much.

● Pete Connor

RELEASE BOX

C64	£8.95cs, £13.95dk	OUT NOW
AMS	£8.95cs, £13.95dk	JAN 88
SPEC	£8.95cs	JAN 88

PREDICTED INTEREST CURVE

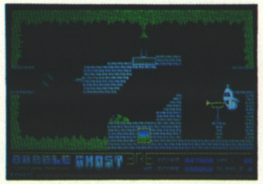


ACE RATING 567

BUBBLE GHOST

Spectral fun from ERE INFORMATIQUE/INFOGRAMES

WELL, here's a turn up for the books – a French game that's not only a pretty face, but packs a powerful and addictive punch of gameplay as well. Hitherto we've seen lots of programs showing off their dazzling cartoon-style graphics, but they sadly lacked anything else. This one fits the bill nicely.



Is that a Joshua-style wall-destroying trumpet? Give it a blast and see.

Like many of the best ideas the game is astonishingly simple; all you have to do is blow a bubble through rooms. But, of course, it's not quite as simple as that might sound. These rooms are filled with a collection of surrealistic graphics and traps, whose presence makes the bubble's progress somewhat problematic.

Doing the huffing and puffing is the cute ghosty you control – a sheet-over-the-head thingy of considerable charm. Ghosty is rotated using the mouse buttons, and given breath by pressing the shift key. Puff, though, is not unlimited; a bar at the bottom of the screen decreases rapidly the longer you keep your finger on the key. If you blow just a bit too hard Ghosty turns red; presumably the French go that colour rather than blue in the face.

As you'd expect, the greatest problem with the bubble is that it has a tendency to burst; contact with any of the walls or objects means the end. To keep it airborne and going in the right direction you have to spin the ghost around and blow – with just the right force.

On the first few screens this is simple enough since you only have to go in straight lines and the obstacles are few. From room 3 onwards, though, things get a little more tricky; puzzles and booby traps are introduced, while your route becomes much more tortuous. Candles appear – and their heat will cause the bubble to rise (there's a simple way to deal with this, but we'll leave you to figure it out). Expanding and contracting walls mean you have to guide the bubble through the gap at exactly right time and at exactly the right level, thus provoking frantic readjustments of your angle of blow.

Later screens introduce further problems; frustration and addiction both mount the longer you play.

The feel of *Bubble Ghost* is reminiscent of *Thrust* as you rotate frantically in attempts to keep your bubble going. And like *Thrust*, it's very addictive. The only possible problem with it is that at 40 or so rooms in size it may not take too long to get to the end. But while it lasts it's great fun.

● Pete Connor

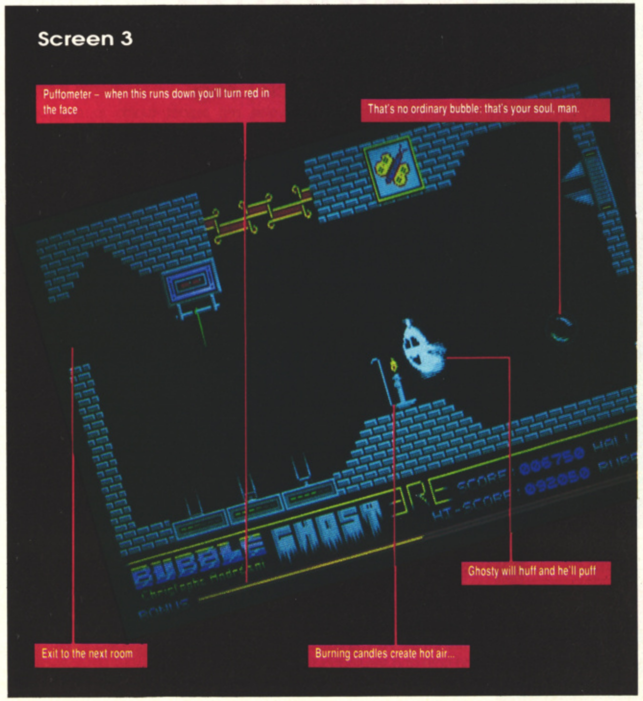
Atari ST Version

The graphics are witty and neatly drawn, with some entertainingly surrealistic touches. There could have been a few more screens, perhaps, but you still get a fun-packed prog with what there is.

GRAPHICS	8	IQ FACTOR	7
AUDIO	6	FUN FACTOR	9

ACE RATING 814

Screen 3



Puffometer – when this runs down you'll turn red in the face

That's no ordinary bubble: that's your soul, man.

Ghosty will huff and he'll puff

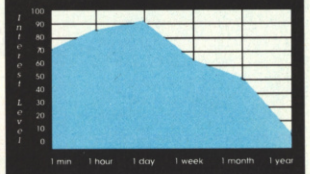
Exit to the next room

Burning candles create hot air...

RELEASE BOX

ATARI ST	£19.95dk	REVIEWED
C64/128	£9.95cs, £ 14.95dk	FEB 88
IBM PC	£19.95dk	FEB 88

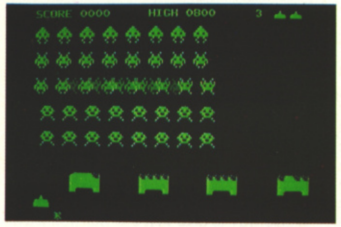
PREDICTED INTEREST CURVE



Grips you straight away in its manic hold and doesn't let go easily. It's fun enough to return to even if you complete it.

ARCADE CLASSICS

FIREBIRD rave from the grave



TO think that once upon a time we all went ga-ga over games like these! Nowadays *Space Invaders*, *Asteroids*, *Snakes* and *Space Wars* look – and play – like dinosaurs from the land that time forgot. It's all a bit sad really; a compilation of arcade classics sounds like a great idea. Unfortunately they just haven't got the sophistication of graphics or gameplay to cut the mustard in these 16-bit times; only the strange deep space rock-blasting of *Asteroids* retains a modicum of compulsiveness.

● Pete Connor

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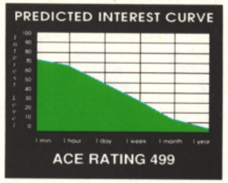
C64	£1.99cs	OUT NOW

PREDICTED INTEREST CURVE



ACE RATING 499

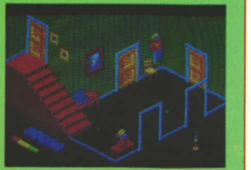
INSIDE OUTING

The EDGE'S little gem

ISOMETRIC three dimensional games still make an appearance every once in a while and if the game's good as this,then why not?

Inside Outing is a witty Isometric romp that has the player roaming through rooms that would grace many a stately home. The object is to collect 12 hidden jewels and take them to the lady of the house – who spends her time wandering aimlessly around in one of the upstairs bedrooms. Collecting the jewels is far easier to say than do however, because many are hidden and only reveal their whereabouts after the player has solved a puzzle. Colourful graphics add a lot of atmosphere to a game that bears more than a passing resemblance to *Get Dexter*

● Andy Smith



RELEASE BOX

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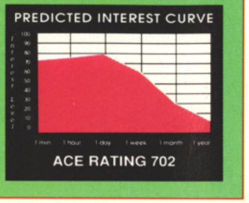
AMS	£8.99cs, £14.99dk	DEC 87
SPEC	£8.99cs	DEC 87

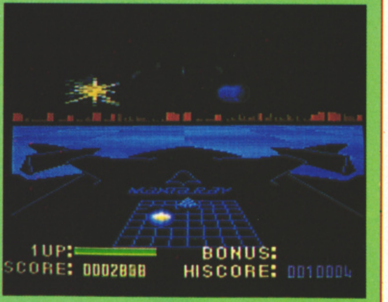
PREDICTED INTEREST CURVE



ACE RATING 702

KROMA ZONE

MASTERTRONIC blast again



YET another 3D shoot-em-up comes down your way. This one's got some pretty neat graphics and sound but virtually nothing in the way of depth or originality of gameplay.

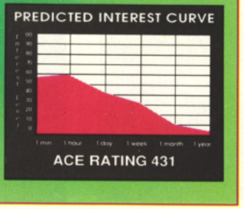
You start off in a preliminary dodge-em-up; you must avoid the globes heading towards your MantaRay ship. This is pretty tough, depending on getting the right rhythm of the advancing waves. Assuming you get through that, you go on to the blasting. Standard stuff, this is, with all sorts of shapes coming at you. *Kromazone*'s OK if you're looking for a quick and cheapish blast, but give it a miss if you want anything in the way of mental challenge.

● Pete Connor

RELEASE BOX

C64	£2.99cs	OUT NOW

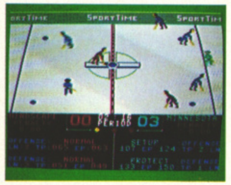
PREDICTED INTEREST CURVE



ACE RATING 431

SUPERSTAR ICE HOCKEY

DATABYTE'S puck prog



JEKYLL and Hyde is what the two versions – IBM PC and C64 – of this game bring to mind; on the PC it's graphically smooth, sonically tolerable and good fun to play; on the C64 it's graphically poor, sonically naff and not a barrel of laughs.

The game's core is playing the game on screen; around this you can do all the usual stuff such as trading players, fiddling around with tactics and competing in a league over a season. All well and good, but you won't really want to bother unless the gameplay is fun. While on the PC you can bump and bore and see sparks fly from your skates as you spin round, on the 64 your man moves more like a bowls player to the accompaniment of sound effects that sound like someone sweeping the living room carpet – as such, it's one strictly for the dedicdated Ice Hockey fan.

● Pete Connor

RELEASE BOX

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IBM PC	£24.95dk	OUT NOW
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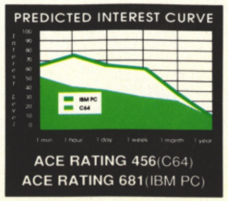
PREDICTED INTEREST CURVE



ACE RATING 456(C64)
ACE RATING 681(IBM PC)

Some very tasty updates are now available for your machines. Can PC owners afford to neglect *Gunship*? Can Amstrad owners be so unwise as to miss out on *RED L.E.D.*?

Bear in mind that even if we didn't particularly like the version of the game that we originally reviewed, the next version could be a whole lot better – as in the case of *Trantor* on the Amstrad, whose graphics put it in an altogether higher class than the Spectrum version.

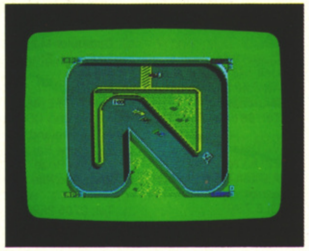
AMSTRAD

SUPER SPRINT

Electric Dreams £9.99cs £14.99dk

Spectrum version reviewed issue 2 – ACE Rating 907
C64 version reviewed issue 3 – ACE Rating 917

A bit of a disappointment really, with little annoyances marring the game's playability. Collision detection is badly off in places, and the 'feel' of the other two versions isn't really there. Still a good racing game, but not a great one.



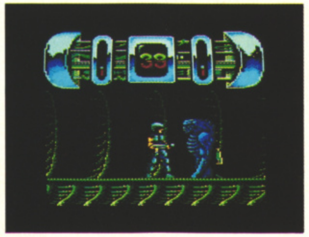
● ACE RATING 831

TRANTOR

GO! £9.99cs £14.99dk

Spectrum version reviewed issue 3 – ACE Rating 517

Great use of colour makes this sideways scroller a big improvement on the Spectrum version. On the gameplay front it's simple blast'n'search fare and the game task is still a bit too easy to provide any real long-term challenge – but what a stunner it is graphically!



● ACE RATING 681

RED L.E.D.

Starlight £9.99cs £14.99dk

C64 version reviewed issue 2 – ACE Rating 910
Spectrum version reviewed issue 3 – ACE Rating 910

Great scrolling – surprisingly smooth – and good use of colour make this an impressive and worthwhile conversion. As on the other versions, the combination of blasting, exploration and *Spindizzy* -style dexterity gives it bags of long-term interest and a nice fat rating.

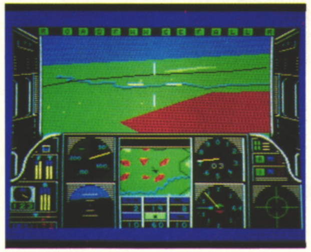
● ACE RATING 915

IBM PC

GUNSHIP

Microprose £34.95dk

Excellent graphics, involving simulation and a variety of missions make this one of the best PC games in a long while. Piloting your 'copter around in order to zap various gooks may not be terribly tasteful – but if you can bear the politics you should have a lot of fun.



● ACE RATING 902

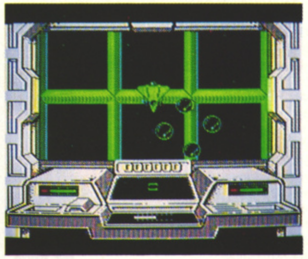
SPECTRUM

IMPLOSION

Cascade £8.95cs

C64 version reviewed in issue 3 – ACE Rating 702

Monochrome it may be, but the scrolling on this shoot-em-up's satisfyingly fast and smooth for such a tricky conversion subject. The *Uridium*-style flipover is gone and the sound's pretty uninspired stuff, but the gameplay's still intact making it good, simple fun.



● ACE RATING 694

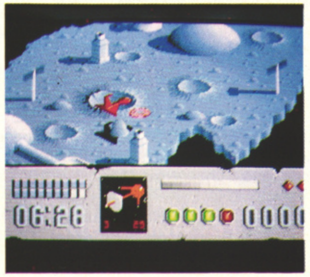
AMIGA

LEVIATHAN

English Software £19.95

This *Zaxxon*-ish 3D shoot-em-up finally makes it to the Amiga, offering a competent but unexciting blast. Like other versions it lacks the feeling of urgency and desperation you get from a good action game. Graphically it's well-drawn and witty, but better use of colour would have made for more initial appeal

● ACE RATING 746



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PHANTOM CLUB

Evil evasion with OCEAN

PHILANTHROPIC you may be, but there's no place for it in the *Phantom Club*, the sequel to the highly original *Movie*. In the guise of a lowly Zelator (beginner), you must travel through a staggering 550 3D locations ridding the Club's headquarters of evil, completing tasks and slowly climbing the ladder to Ipsisimus – overlord status with ample power to defeat the nefarious Zarg.

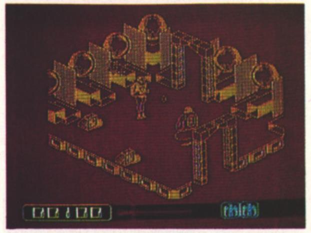
Thankfully, the icon-control system which featured heavily in *Movie* has disappeared. In fact, almost the whole screen is devoted to the graphically-pleasing artifacts of the Club. You, Plutus, begin with five reincarnations, full energy and Brainstorm (your fire power). The start room, and every location thereafter, is littered with objects – some good, some bad, some purely for decoration. To determine which is which will take considerable time.

Completing missions entails locating and killing a character. When you achieve Ipsisimus (level 10) you get to do battle with Zarg himself. However, a task is only set if you've attained the correct rank and have 40,000 points under your belt.

Points are gained by blasting the bizarre animated objects. When Zarg's minions are shot they don't disappear: some characters freeze, others spin, the really nasty ones mutate.

Phantom Club is going to keep you locked to the screen for a long while. Neat graphics, pleasing introductory music and plenty for the hardened arcade adventurer to explore and blow away.

● Richard Monteiro



Prepare to meet the levitating Buddha – it'll take quite a few shots to send him back to Nirvana

RELEASE BOX		
C64/128	£8.95cs, £12.95dk	JAN 88
SPEC	£7.95cs	OUT NOW
AMS	£8.95cs, £14.95dk	JAN 88

Spectrum Version

This is a big game and is definitely one for the mappers and puzzlers. And if you didn't like *Movie* it's unlikely to grab you. Graphics are not terribly colourful, but are very detailed. It's very playable and will keep you at it for some time.

GRAPHICS	7	IQ FACTOR	9
AUDIO	6	FUN FACTOR	7

ACE RATING 845

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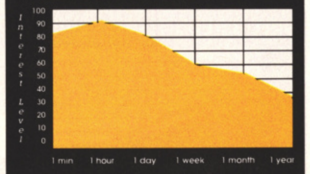

Lots of fun – but the puzzles mean you'll have to stick at it for some time

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FREDDY HARDEST

Playboy fun from IMAGINE

FREDDY, our eponymous hero, is billed as 'the mischievous playboy in the galaxy'; for his screen debut Freddy has crashed his spacecraft somewhere in the Milky Way and must fight his way off the planet, eventually escaping for home.

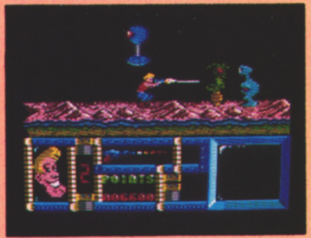
The game is a two parter; the first half taking you through a horizontally scrolling landscape, shooting at a vast number of various nasties or felling them with a flying kick while negotiating craters and leaping across holes in the surface. The graphics are all large and nicely detailed and the aliens are large, neatly animated and suitably weird-looking.

Having completed part one, you'll be given an access code which enables you to load part two. Here you're inside the enemy base, searching terminals for a code with which you can hi-jack the captain's ship.

Although part two's screens look completely different, the gameplay is more or less the same. The enemy base is a network of two-tier tunnels and corridors. You must crouch to avoid sounders and blast or kick the inhabitants and robots. You can also move up and down from level to level via lifts or tunnels.

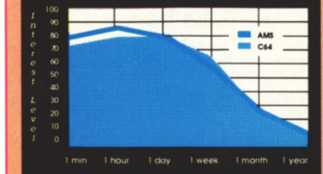
Freddy Hardest is essentially very simple in concept – dodge, blast and kick your way out of trouble, basically – so despite the different scenes in the second part, it all gets rather repetitive after a while. But it's jolly enough and pretty enough while it lasts.

● Christina Erskine



Playboy Freddy getting his kicks. It takes all sorts...

PREDICTED INTEREST CURVE



Jolly and pretty at the start but it certainly won't trouble you too much in the long term

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AMS	£8.95cs, £14.95dk	OUT NOW
SPEC	£7.95cs	DEC 87

C64 Version

Gameplay appears slightly tougher than on CPCs, especially on jumping and leaping, and you'll be tempted to cry 'foul' when floating aliens materialise while you're in mid-air and finish you off. Graphics have plenty of detail and the music sounds great.

GRAPHICS	8	IQ FACTOR	3
AUDIO	8	FUN FACTOR	6

ACE RATING 715

Amstrad Version

Nice animation with Freddy strutting, floating robots bobbing up and down, aliens lolloping across the screens. Gameplay fast with plenty to shoot and watch out for. The graphics are cheerful and colourful to the extent that the aliens look almost cuddly. Some of the collision detection is decidedly suspect, but when jumping from island to island it frequently works in your favour.

GRAPHICS	8	IQ FACTOR	2
AUDIO	7	FUN FACTOR	6

ACE RATING 734

JACKAL

KONAMI koin-op konversion

RELEASE BOX

C64/128	£8.95cs, £14.95dk	IMMINENT
SPEC	£7.95cs	OUT NOW
AMS	£8.95cs, £14.95dk	OUT NOW

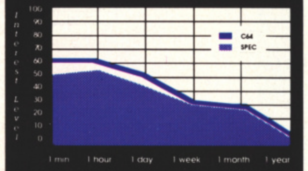
Spectrum Version

As you'd expect from the scenario, there's nothing too intellectually demanding in *Jackal*. Graphics are rather poor by current standards; enemy soldiers are tiny and unconvincing stick figures, while backgrounds are standard issue stuff. The merely average sound does nothing to soup up the fun.

GRAPHICS	5	IQ FACTOR	1
AUDIO	5	FUN FACTOR	6

ACE RATING 487

PREDICTED INTEREST CURVE



Even for a coin-op conversion this has little in the way of long-term involvement. Sadly, it doesn't have much in the short term either.

TWO years too late is the initial feeling you get upon playing Konami's latest conversion; the game is basically the old *Commando/Rambo* idea in a jeep.

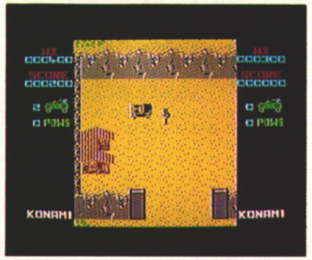
The plot is perfunctory; you land behind enemy lines in order to rescue your captured troops. You get a jeep which can fire either a machine gun or missiles. When you collect men you then go to a heli-pad so that they can be picked up by a chopper.

As you'd expect, the territory is infested with enemy troops and defences. Soldiers troll around with guns and grenades; pill-boxes with rotating guns are all over the place; tanks are plentiful. It's a question of blasting all and sundry in order to survive.

Jackal's playing area occupies only about half of the screen, and your jeep isn't even centred inside it, so that when you get to the edge of the area you're quite likely to get blasted by a gun-emplacement you couldn't see. Furthermore, the range of most of your weapons is such that you have to get dangerously close to things to shoot them.

As well as the unsatisfactory gameplay, *Jackal* also suffers from oddities in the presentation. In particular, the packaging might lead you to think that there were elements of choosing characters with different capabilities or weapons; no such luck. You get what you're given – the jeep – and have to make do with it.

● Peter Connor



Spectrum version: Blast the gun, blast the tanks, blast the soldiers

CPC Version

The CPC *Jackal* is worse than the Spectrum in every respect; graphics are even more rudimentary, with miserable-looking soldiers you wouldn't really want to recruit if you were running your own army. Sound is very weak and it certainly won't tax your mind any more than on the Speccy.

GRAPHICS	4	IQ FACTOR	1
AUDIO	4	FUN FACTOR	5

ACE RATING 450

BLUE WAR

Plumbing the depths with GO!

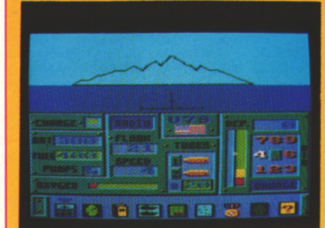
BY the very nature of the real thing, submarine simulations are likely to be slow. The emphasis is always going to be on tactical manoeuvring and the controls rather than making free with the torpedoes and blowing the enemy out of the water. *Blue War* certainly doesn't let you down in the slow and cautious department.

The game looks like a rushed release. Originally produced in France, the English version has been sloppily translated, with instructions like "Insert the disk 2 and push enter" and the compass points on your controls marked N, S, E and O (for *Ouest* instead of West). On the ST versions, the instructions tell you to press T to fire torpedoes but they actually work a lot better if you press F.

In the play, you command the submarine U79 in the Pacific Ocean in 1941. Get the craft going, dive – or not – sight your targets on radar/sonar, check the map, home in on enemy ships (this can take a very long time) and fire torpedoes at them. Go and refuel. That's it.

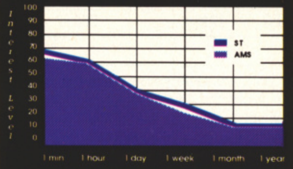
It's just about adequate, and nice looking on the ST version, but it won't give anyone selling *Silent Service* any sleepless nights.

● Christina Erskine



ST version: hunting for kills in the Pacific

PREDICTED INTEREST CURVE



Looks interesting on start-up, but the action is too low-key to hold the interest

RELEASE BOX

ATARI ST	£19.99dk	OUT NOW
AMS	£14.99dk	OUT NOW

Atari ST Version

Nice graphics and some good gloomily echoing sound effects, but there's little excitement from either the action or simulation viewpoint. The poor translation from the French can be confusing.

GRAPHICS	7	IQ FACTOR	6
AUDIO	4	FUN FACTOR	2

ACE RATING 450

Amstrad Version

It may be disk only, but it's appallingly slow to respond to key presses — yes, it's keyboard only. Controlling the submarine's course is much less accurate, due to the use of numbers 1-9 to denote direction rather than compass points in degrees on the ST.

GRAPHICS	6	IQ FACTOR	6
AUDIO	4	FUN FACTOR	2

ACE RATING 425

DARK SCEPTRE

Make some strange friends with FIREBIRD

REAPERS, assassins, fools; lend me your ears – for the darkness descends on this fair Western Isle of ours. The Northlanders, once mere men like you and I, have been touched by the malice of the Dark Sceptre and have become the Lords Of The Shadows; gripped by evil.

That, then, is the scene set for this long-awaited Mike Singleton game. The player takes charge of a band of warriors of varying ability and tries to use their differing characteristics in an attempt to befriend and recruit allies from among the other six tribes on the island. The objective is to recover and destroy the Dark Sceptre before it can do more harm.

You view the game through an on-screen window that displays either a representation of the characters on their travels or a menu displaying a number of possible choices that are available to whichever character you happen to be controlling. Alternating between characters simply involves moving either your joystick (or pressing a key) left or right. You then issue up to three separate orders to the character; when you have finished, the screen switches to show your character stomping off to complete the first order (to the best of his ability.)

Orders possible include; HARASSing other warriors; BRIBE other warriors; GUARDing objects; WAIT AT places and WAIT FOR warriors. There are approx 30 different commands that can be issued to any number of your characters. As mentioned earlier, these characters have peculiar attributes which need utilising; Mystics are usually in possession of magical powers which allows them to carry out orders requiring a certain knowledge of such things, whereas Fools (despite the name) are persuasive and good talkers, which makes them handy at convincing other characters of your worthy and just crusade.

Merely attempting to take the Sceptre at the beginning of the game is not such a good idea as several steps have to be taken to ensure the power of the thing doesn't destroy you. There are lots of other objects found around the isle that can be utillised in the attempt to reach your goal, and it's up to the player to discover how these objects are best used.

Dark Sceptre has a very familiar feel about it if you've ever played *Lords Of Midnight* or *Doomdark's Revenge*, in that the game is deep and complex with enough happening to keep you engrossed and playing for months to come.

● Andy Smith

RELEASE BOX

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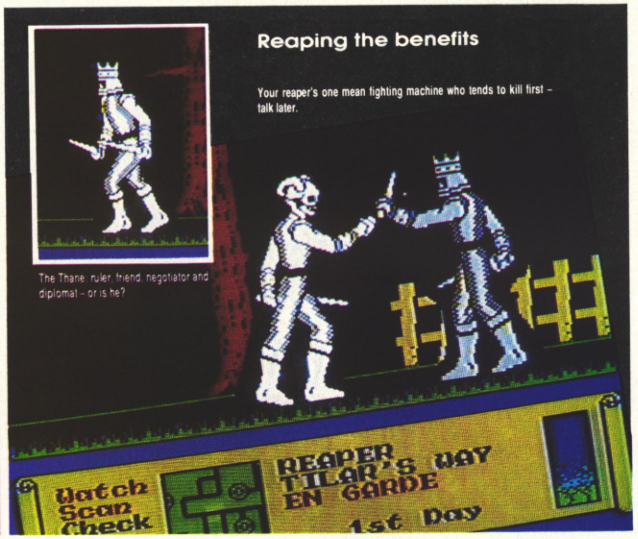
AMS	£8.95cs, £14.95dk	JAN 88



The Thane: ruler, friend, negotiator and diplomat – or is he?

Reaping the benefits

Your reaper's one mean fighting machine who tends to kill first – talk later.

Familiarity breeds contempt?

When a programmer writes a very successful game, he can find himself with a reputation to live up to. Mike Singleton is one such programmer; his immensely successful *Lords Of Midnight* and *Doomdark's Revenge* games have meant that any further release is bound to be compared to the earlier masterpieces.

In some respects *Dark Sceptre* is very comparable to the earlier games. The idea of having to recruit allies and utilise their particular abilities was seen in both of the earlier games., but despite being a very good game, Dark Sceptre just doesn't seem to create the same atmosphere as the other two games. It's involving all right, but not to the extent that either of the earlier games were. Could it be that Mike Singleton has reached the end of this particular vein?

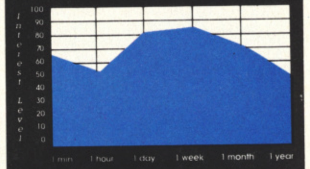
Spectrum Version

Huge colourful sprites roam the game area clashing only in combat. A black border around each figure prevents any hint of attribute clash – it's clever; effective and very well done. Sound is limited to stomping footsteps and chilling steel-on-steel effects, plus a short piece of music to indicate a recruitment or a desertion. The large game area and the amount and variety of objects that need to be manipulated properly means you'll be puzzling for quite some time. Even so, the ability to save the game position enables you to pick and play for short periods without having to cover old ground.

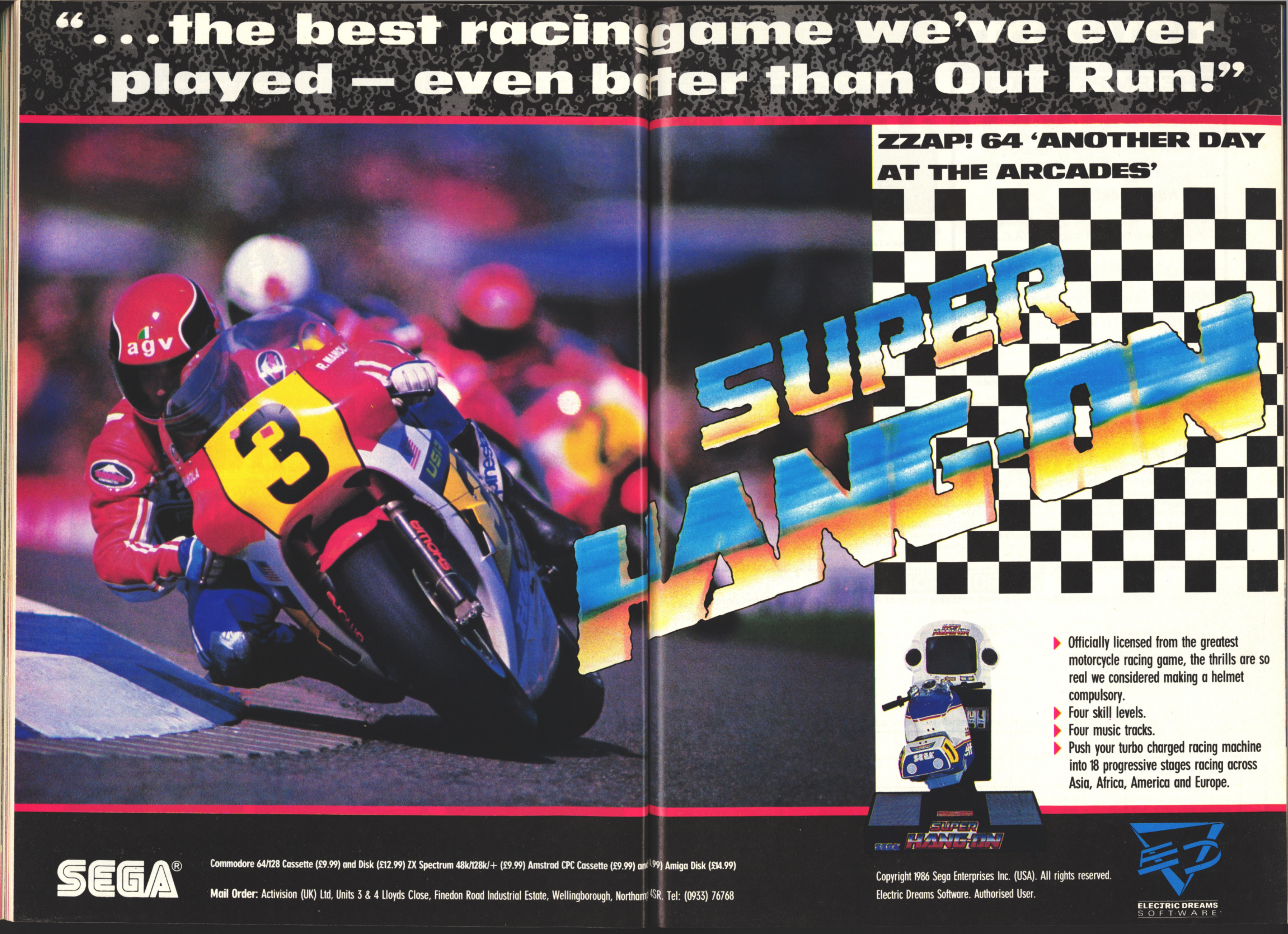
GRAPHICS	7	IQ FACTOR	7
AUDIO	7	FUN FACTOR	6

ACE RATING 856

PREDICTED INTEREST CURVE



Instant appeal gives way to panic as your forces stumble around – but find some objects and the game will reveal its depth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CHRISTMAS CRACKERS

Every so often, collections of classic or not-so-classic games appear on the High Street shelves, but at this time of year, with Santa about to start his annual round of house-calls, the software industry goes compilation crazy. Graham Kidd sniffs out some unbeatable bargains...

Compilations represent one of the cheapest ways of buying games – particularly if you are buying a new computer, even more so if you're buying one that has yet to attract a large software base (such as the Spectrum Plus 3). For around the price of a new full-price release you can add five, ten, even a dozen games to your collection. Classics of yesteryear, recent hits and the odd turkey all jostle for space on the tracks of these software albums. We take a whistle-stop tour of what's on offer this yuletide so you can make sure Santa's in no doubt as to what you'd like as a stocking filler...

The Elite Collection

Elite

C16	£14.95 cs
C64/128	£14.95 cs £19.95 dk
Spectrum	£14.95 cs
Amstrad	£14.95 cs £19.95 dk

An eight-game collection that leads on coin-op conversions and includes a title that was held back from solo release – Battleships.

VOLUME I

Bombjack

A competent conversion of Tehkan's five-screen platform romp that sets a caped crusader on the track of fizzling bombs. The action is fairly straightforward – sproing around each successive screen gathering up the bombs, and gather them in the correct order for maximum points. There's no depth of plot or involved scenario to baffle the brain, pattern-learning and skillful control are all you need. Commodore owners might be a little less impressed than their Amstrad and Spectrum owning colleagues...

Frank Bruno's Boxing

Effectively a version of the arcade scrapping game, *Punch Out*, this was Elite's contender in the boxing simulation stakes nearly two years ago. Eight boxers stand between you and the World Heavyweight Championship, each with their own particular fighting style. Viewing the action from behind your fighter, the aim is to reduce your opponent's stamina and then knock him down. Three knockouts leads to a convincing defeat and an access code is given which allows the next fighter in line to be challenged. And no, Joe Bugner isn't one of the eight bruisers ranged before you in this playable sports simulation.

Commando

Capcom provided the licence and the battlefield action is fast and furious in this one-man mission of mayhem and destruction. Romping, or should that be yomping across the vertically scrolling landscape the aim is to knock out four enemy fortresses. The enemy, quite naturally takes exception to such displays of heroism and a host of soldiers armed with single shot rifles, grenades, bazookas and mortars queue up to put an end to your ambition. Fortunately your sub machine gun never runs out of ammo and there are boxes of grenades lying around the terrain to replenish your supplies. The going gets tougher the further into the game you get – should keep kill-crazy joystick wielders happy until their trigger fingers bleed.

Airwolf

Assuming the role of Vietnam veteran Stringfellow Hawke your mission at the controls of a helicopter is to rescue five scientists held prisoner in a network of caverns. Before you can get to the imprisoned boffins the complex defence system that adorns the caves has to be shot out, element by element and there's always the risk of crashing into the rock walls. A golden oldie this, dragged from the mists of time when Elite was but a fledgeling software house – still stands up as a shoot-em-up, not least because mastering the controls of the helicopter takes a while.

VOLUME II

Paperboy

HI-SCORE
00088
BONUS
49:48
SC
000

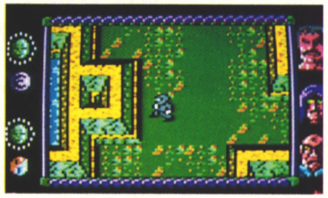
This year's all-time chart hit according to the figures published by Gallup – it proved almost impossible to dislodge from the Number One slot. Pedalling round suburbia as the representative of the local rag, the aim is to deliver papers to subscribers while avoiding pedestrians and kamikaze vehicles. Rather than place the newspapers in letterboxes you have to hurl them – miss, and you run the risk of breaking windows. At the end of the round bonus points are collected by riding over a BMX course and indulging in a bit of target practice. Annoy too many subscribers and you're taken off the round – build up the round and the points potential increases. Not Elite's best effort at converting from the arcades, but sales levels made it a clear winner...

Ghosts 'n' Goblins

A fair maiden is captured by an evil demon, so the knight has no choice – the demon horde and the forces of the supernatural have to be overcome on a scrolling quest to the demon's lair where the lady may be rescued. Probably Elite's best arcade effort so far – true to the original and lots of fun to play. Need more be said?

Battleships

The game they dare not release! All credit to Elite for realising late in the day that this computerised emulation of the age-old pencil and paper game couldn't really stand up as a full-price release. There's nothing borrowed or blue in The Elite Collection, and this game slots in as 'the new'. An interesting diversion, but never likely to become a cult classic...



Bombjack II

Better than the original. For once, untrammelled by the constrictions of producing a faithful version of an arcade game, Elite had some fun. The caped crusader made famous by Tehkan abandons bombs (too dangerous) and collects bags of gold (more lucrative). Another platform/collecting game, the sequel boasts many more screens and includes mutating monsters that get smarter the longer you dally. The little baddies can be biffed, but that uses up energy and when the hero gets tired out he dies. Lots of fun.

Verdict: A good, solid collection of games that offers plenty of variety at a reasonable price.

Ten Great Games

Gremlin

C64/128	£9.99 cs £14.99 dk
Spectrum	£9.99 cs
Amstrad	£9.99 cs £14.99 dk

Not six of the best, but ten of the best games launched into the world over the last couple of years by Gremlin Graphics. Well nine then, and one from Vortex. Picky, picky...

Avenger

Gremlin's answer to scrolling-shooting dungeon games like *Druid* and *Gauntlet* sets an oriental hero on a quest to penetrate the lair of an evil overlord and rescue some scrolls. Inner force and endurance are depleted by the aggressive minions that try to thwart you as you kick and punch past them. A limited supply of deadly shuriken stars is available to hurl at the foe. Nothing outstandingly original here, save the moving sections of floor, but still a very playable dungeons derivative.

Future Knight

A slick platforms and ladders game set inside the hulk of a crashed spacecraft. The hero scurries round attempting to kill or avoid the beserk security droids as he hunts for extra weapons and keys and finally, the exit pass that gives access to the outside world. More spells have to be collected in the Great Outdoors before the imprisoned maiden (the cause of all this frantic activity) can be freed. A polished arcade adventure that should challenge a range of skills.

Krakout

Breakout came back into fashion this year for an as-yet-unexplained reason, and bells and whistles were added to the basic concept by a host of software houses. Gremlin weren't going to be left out and so offered up this competent variation on the theme. Playable and fun, though arguably not the best of the second breed of Breakouts, but still stands up well, particularly on a compilation.

Bounder

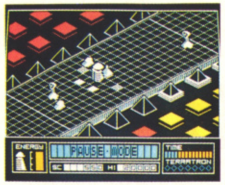
A maddeningly addictive platform game with one major difference – the player's viewpoint. Controlling a bouncing ball, you view the action from above, bouncing from one section of platform-paving to another as the vertical scroll forces the pace. Ten courses to negotiate with a bonus section at the end of each, all packed with twists and turns – like airblowers to drive you off course, impassable walls that have to be bounced around and extra-bounce paving slabs. Airborne hazards and volcanos make life that little bit more difficult. Addictive, frustrating and fun.

Footballer of the Year

A sort of 'Football-opoly' in which your aim is to become, yes that's it, Footballer of the Year. Strategy is involved in deciding how to apply your financial resources and a spot of arcade skill comes into play when you get to shoot at the goalmouth. Gamble wisely, play well and you could end up as F... yes, we've got the picture. An interesting, and potentially very addictive game that is playable even if you aren't a football fan.

Trailblazer

Wowee! What a race game. Dispensing with the usual souped up bike or formula racing car, you roll a ball along a chequered pathway that scrolls out of space. Gaps in the pathway must be negotiated if a time penalty is to be avoided and colour-coded sections of track speed the ball up, slow it down or confer extra jumping ability. Desperately fast and furious, quick reflexes and a good memory for the track are called for if success is to be achieved. Great fun on your own, more fun with a friend.



Highway Encounter

The only non-Gremlin game in this collection, chosen no doubt on account of its masterly use of 3D. An alien mothership lurks at one end of a long, dangerous highway and the means to destroy it, along with a team of five subservient droids is parked at the other end. Your aim: to push the deadly lastertron down the road and destroy the alien craft. Only one droid at a time can be used to shove the weapon, and a host of aliens lies in your path. Thought as well as shooting action is involved, as some patrolling aliens need to be boxed in by shoving barrels and boxes around the road.

Monty on the Run

The classic follow-up to the game that launched Gremlin. The hero mole is out of clink but wishes to flee the country – to do so money and an escape kit need to be collected by leaping round the platformed environment Monty finds himself occupying. Full of sneaky twists and tortuous puzzles, the game calls for pixel-perfect positioning and a cool head. A dastardly difficult platform-based arcade adventure.

West Bank

Gameplay couldn't be much simpler: a door opens to reveal a goodie or a baddie. Shoot the goodie and lose, shoot the baddie before he shoots you and you win. Every now and then a little character appears in an open doorway with either a bomb or bags of money on his head. Shoot the bomb and you lose, shoot the money and you win. Move left or right to pan your field of view across the doors you have to defend, press fire to shoot. That's it, but the game's great fun to play.

Jack The Nipper

An arcade adventure with a fairly traditional 'find and move vital object to correct location' construction but featuring the added gloss of comic characters that Leo Baxendale (deviser of the Beano's Bash Street Kids) would have been proud of. Rather than being a hero, you are cast as a tiny villain, not yet out of nappies, whose aim in life is to be as naughty as possible. Chuckle at the graphics, puzzle over the fiendish riddles and find yourself absorbed.

Verdict: Essentially, 'The Best of Gremlin' – a collection of respectable games that represents excellent value and offers a wide mix of content and playing styles. A well-rounded selection that would form a good basis to a software library being started from scratch.

Live Ammo

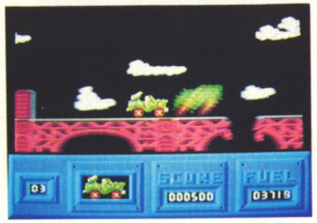
Ocean

Amstrad	£9.95 cs £14.95
C64/128	£9.95 cs £14.95
Spectrum	£9.95 cs

A 'specialist interest' compilation this one – if you like your pixels militaristic and served up with plenty of opportunities for murdering the opposition, then *Live Ammo* is the compilation for you. Apparently W.H.Smith insisted that the name be changed to *Live Action* – we reckon it should just be called *Sick, Sick, Sick...*

Army Moves

We will fight them from the jeep, we will fight them from the air, we will fight them on foot. Such might be the motto of the Secret Operations Corps. You are one of this elite squad with a mission to retrieve a set of plans locked away in the enemy's HQ that lies at the end of seven combat-ridden levels of play. Blast the baddies from the relative comfort of jeep while avoiding hazards in the road, take to the air in a chopper and then fight through the jungle on foot. A difficult game to play – which can lead to frustration or total addiction.



Rambo

A one-mission jaunt into the jungle on the trail of some captured comrades, this offers *Commando*-style play in a different multi-directional scrolling scenario. Purists may prefer *Commando* to this clone with Stallone, but there's a fair bit of fun to be had if killing gooks is your bag, including the opportunity to pilot a helicopter laden with your buddies (if you get that far). On the other hand, if killing 'gooks' *is* your bag, then you probably don't deserve any buddies anyway. A little short on playability, but fun for those with itchy fingers.

Green Beret

Yet again it's kill the enemy soldiers and rescue your buddies time, only it's a horizontally-scrolling killing field that you have to traverse. Armed with a knife and iron determination, three levels need to be negotiated before the mission ends, each packed with running, jumping fighting men – and a truckload of soldiers waits for you to arrive at the end of a level. Grenades and flamethrowers can be collected by killing key opponents, but the extra firepower only lasts for a few blasts. Highly playable, every bit as much fun as the arcade original.

Top Gun

A particularly good film tie-in – one that doesn't bother trying to mess around with following the plot. This is a one or two player combat flight simulator that seats the combatant in the cockpit of an F14 Tomcat (hence the Top Gun tie-in). Vector graphics, with an abstract row of dots for the horizon, are used to display the view from the driving seat, and head to head combat is what the contest is all about. Excellent fun, even if you aren't a flight simulator fan. Even more fun when you play with a friend.

The Great Escape

Yet another classic title from the Denton Designs team, as much of a movie as a game – it's well worth just watching the action for a while before starting to play. Life marches on in the POW camp, whether you try to escape or not. Prisoners and guards go about their daily routine, seemingly oblivious of your intentions. Formulate a plan, gather up the equipment and try to make good an escape. Fail, or be caught out of bounds by the guards and it's a spell in the cooler... A challenging arcade adventure with a novel presentation. Some killing, but not a lot, which just goes to prove that you don't need bloodshed to borrow your thrills from military conflict..

Verdict: Four out-and-out combat games rounded off by a spell as a POW. Shooting to kill is the main theme, although there's some opportunity to use the Grey Matter to advantage.

Magnificent Seven

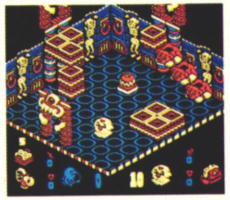
Ocean

Amstrad	£9.95 cs £14.95 dk
C64/128	£9.95 cs £14.95 dk
Spectrum	£9.95 cs

Not seven, but eight games in this action collection. Which one's the 'free' game? Answers please, on a postcard...

Head Over Heels

Jon Ritman provided the world with *Batman* and then went on to force even more convoluted conundrums onto the isometric world of arcade adventuring with this tale of two alien secret agents teaming up to destroy the forces of evil. Nothing terribly remarkable or new in terms of the presentation or style, but what a load of game it packs! Witty sound and graphics combine with the fiendish puzzles to capture the attention of the most avid arcade adventurer.

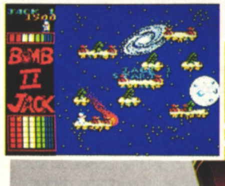


Arkanoid

Another *Breakout* variant (see *Ten Great Games* above), this one gives you 33 frames of brick-bashing ball-batting action. One of the best examples of the genre...

Wiz Ball

A first rate game on the Commodore from a new program-



THE elite COLLECTION
Best of elite
Best of elite
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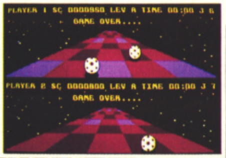
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GAME OVER....
PLAYER 2 SC 0000000 LEV A TIME 00:00 3 7
GAME OVER...

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MORE ENTERTAINMENT FOR
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ocean
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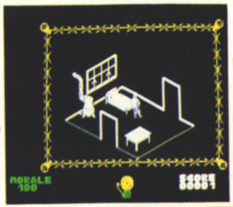


GNIFICENT SEVEN
FRANKIE
WIZBALL
ocean
PLUS YIE AR KUNG FU FREE

ming partnership that lost out somewhat in the transfer to the Z80. A zany arcade adventure that casts the player in the role of planetary decorator – aliens have stolen all the colour from Wizworld, rendering it a drab place and it is the task of the Wizard, aided by his magic ball and pussycat, to collect and mix pigment and thus bring colour back to the world. A charming, offbeat scenario is enhanced by the way the wiz has to interact with his cat to get the task done.

Short Circuit

A film tie-in that consists of an 3D arcade adventure section followed by a chase and shoot sequence over a scrolling landscape. The cute robot, Number Five, has to find security keys in order to escape from a factory/office complex, preferably with some weaponry, and then avoid his makers as they pursue him cross country. Great fun on the Amstrad, a little flat on the Spectrum and less fun still on the Commodore. Strange how widely the three versions differ in appeal.

Cobra

Another Stallone-clone tie-in: the battle action is against street thugs, a damsel is in distress, the backdrop scrolls horizontally and is peppered with platforms. *Green Beret* in a different guise – and three different incarnations, almost. The well-playable Spectrum version is full of humour and added touches, while the Amstrad version is a little too easy and the Commodore Cobra more of a slow-worm than a snake.

Frankie Goes To Hollywood

A true classic that brought a new dimension to both tie-ins and arcade adventures. Denton Designs excelled themselves – not a Frankie to be seen anywhere in the game. Instead, the central character wanders round a terrace of ordinary suburban houses, searching for objects by touch and using them to enter sub-games. Love, sex, war and religion factors have to be increased until they reach maximum whereupon the player becomes a whole person. Only then can you contemplate entering the pleasure dome... A very unusual playing style, involving a running sub-game in which you have to solve a murder... An essential part of anyone's software collection, if only because it's so different.

...And that's not all!

You should find a fair few more compilations jostling for shelf space over the next month or two. **Three Coin-Op Classics** is on its way from US Gold at £9.99 for instance, featuring *Breakthru*, *Crystal Castles* and *Kung Fu Master* (not the most powerful trio of arcade versions ever assembled). Then there's Beau Jolly's **Five Star Games** (again featuring two freebies, making seven) that comprises *Alien*, *Way of the Exploding Fist*, *Strike Force Harrier*, *Trap Door*, *Firelord* and *Tau Ceti* for everyone, with Amstrad owners collecting *Tempest* and Commodore and Spectrum people receiving *Uridium Plus*. A powerful collection for £9.95 on cassette or £14.95 on Commodore or Amstrad disk.

It doesn't all stop at Christmas, either. Should you find there's still some game-buying cash in the kitty in January, Hewsons' **Four Smash Hits** wouldn't be a bad buy, offering *Zynapse*, *Exolon*, *Ranarama* and *Uridium Plus* for £9.99 on cassette or £14.95 on disk (including Spectrum +3 if demand makes it viable).

Not just for kids...

This year's charity compilation, **Kids Play**, offers ten pretty good games for £9.99 on cassette and is well worth checking out – not least because all the games have been donated to the cause and any profits made are sent scurrying off to the NSPCC to help disadvantaged youngsters.

Yie Ar Kung Fu

Imagine's version of this Konami coin-op hit went down better than *Way of the Exploding Fist* in some quarters. Eight opponents range themselves against the humble Oolong, defender of right and justice, bringing into play their own personal weapons and fighting styles. Kick and punch your way past the opposition to fame and glory – if you can. Great fun for fight freaks.

Solid Gold

US Gold

Amstrad	£9.99 cs £19.99 dk
C64/128	£9.99 cs £14.99 dk
Spectrum	£9.99 cs £19.99 dk

Ace of Aces

Remember *Dambusters*? Well this is arguably what *Dambusters* should have been but never quite was. Ensconced in the cockpit of a Mosquito you get to fly missions against Germany, choosing whether to intercept bombers or rockets or perhaps going for a U Boat pen or train. Half flight simulator (no landing or taking off skills called for) and half arcade combat game, this should keep potential Bigglesworths pleasantly amused – you don't have to pore over a huge manual and practice endlessly to start flying competently.

Infiltrator

A veritable pot-pourri of gamestyles is on offer in this mission to save the world from yet another madman and his henchpersons. Pilot a helicopter to the base in the flight-simulation sequence, avoid, kill or stun the guards in the madman's den and search the buildings for clues and vital information. Once the secret plans have been photographed, fly back to base and start all over again. A secret agent game that auditions all the skills needed to join the secret service...

Winter Games

An octet of icy action games from Epyx, the sports simulation specialists. Ski, skate or take the challenge of a cresta run in a bobsled. All the gloss, polish and playability that have made Epyx leaders in the field – as much fun as *Summer Games*, *World Games* and *California Games*.

Gauntlet

A hit conversion of a hit arcade game. Play solo or with a friend, choosing which of the four intrepid adventurers you wish to take into the walled dungeons. Collect food, treasure and potions, kill the nasties and attempt to conserve strength for the later levels. An excellent hack 'n' slay excursion into the world of scrolling dungeons.

Leaderboard

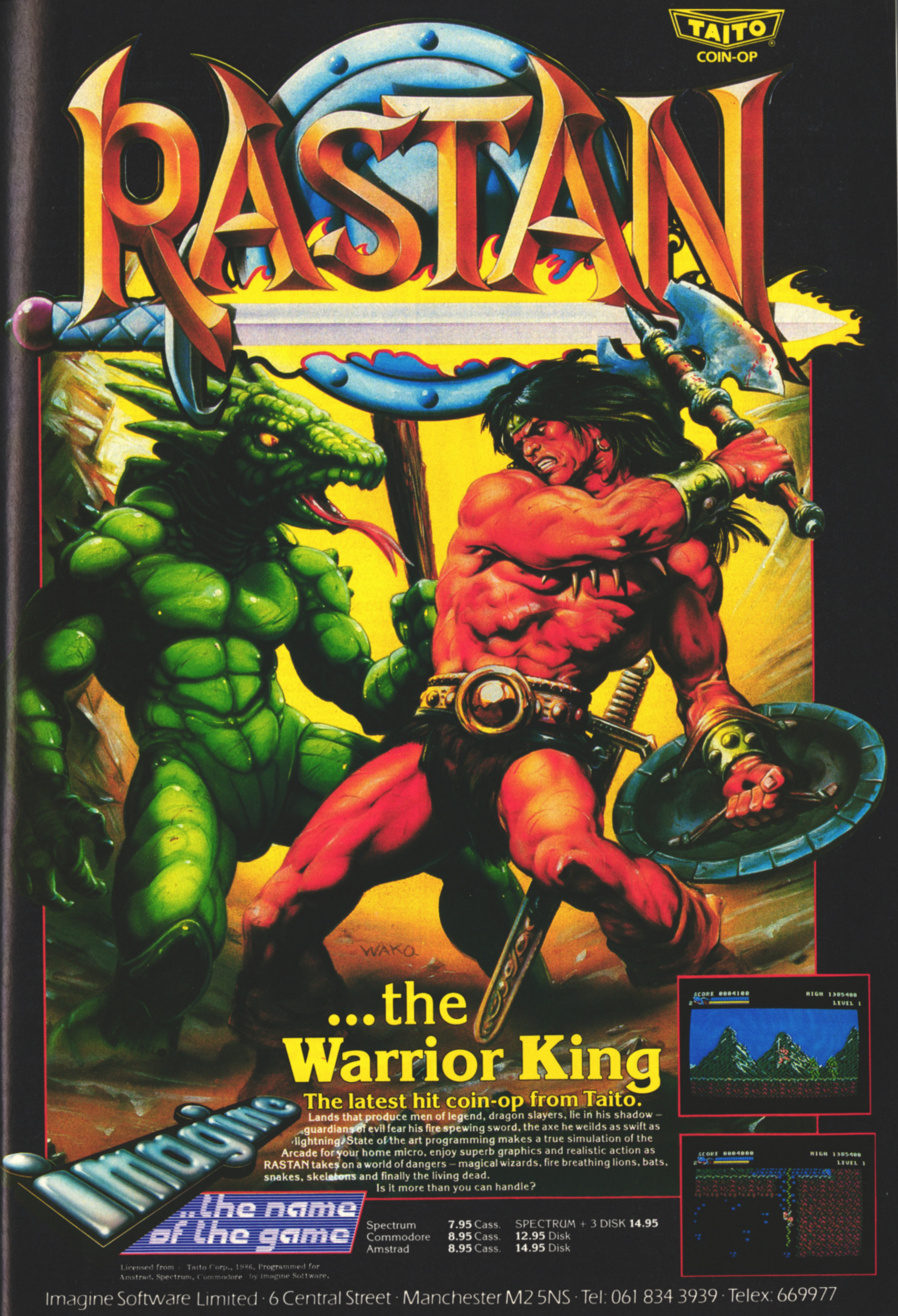
THE golf simulation. Until *Leaderboard* arrived on the scene, golf was a game that hadn't managed to fire the imagination of game players – you either had the 'purist' simulations (deadly accurate, deadly boring) or the so-called 'arcade' simulations (little stick men on green backgrounds). With *Leaderboard*, the controls were simplified, the view of the fairway given from behind the tee and the game finally made playable and fun for all.

Verdict: A good mix of gamestyles assembled from the better part of US Gold's back catalogue – a lot more user-friendly on disk, however.

Budget Bargain

Yes, there's even a budget compilation – Micro Value are offering **Four Great Games Volume Two** for £3.99, and cover the Electron, MSX, Atari XL and C16/+4 as well as the three main 8-bit games machines, offering different sets of venerable old games.

BREAKTHRU
CRYSTAL CASTLES
CBM 64/128
3 COIN OP
LEADERBOARD
WINTER GAMES
INFILTRATOR
GOLD


TAITO COIN-OP
RASTAN
WAKO
SCORE 0004100 HIGH 1305400 LEVEL 1
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imagine

...the Warrior King

The latest hit coin-op from Taito.

Lands that produce men of legend, dragon slayers, lie in his shadow – guardians of evil fear his fire spewing sword, the axe he weilds as swift as lightning. State of the art programming makes a true simulation of the Arcade for your home micro, enjoy superb graphics and realistic action as RASTAN takes on a world of dangers – magical wizards, fire breathing lions, bats, snakes, skeletons and finally the living dead.

Is it more than you can handle?

...the name of the game

Spectrum	**7.95** Cass.	SPECTRUM + 3 DISK **14.95**
Commodore	**8.95** Cass.	**12.95** Disk
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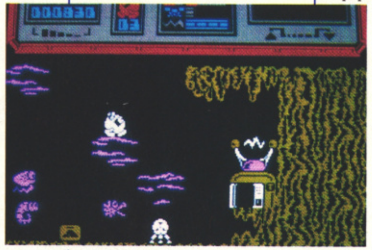
10 Computer Hits 4

Beau Jolly

Amstrad £9.95 cs £13.95 dk
C64/128 £9.95 cs £13.95 dk
Spectrum £9.95 cs

...And two 'free' games makes twelve. Everyone gets a copy of *Spindizzy*, the first-rate Marble Madness-esque spinning top game and *Dandy*, Electric Dreams' pitch at the *Gauntlet*-clone market which came a bit late and proved less than totally impressive.

In addition to the aforementioned duo, five games are common to all three formats:



Starquake

An excellent, cutesy, arcade adventure from the programming parlour of Steve Crow, guaranteed to amuse and entertain.

Deactivators

A complicated puzzle game that requires you to clear buildings of bombs and reassemble a computer using Deactivator droids. Plenty of brainpower is needed to solve this unusual game.

Sacred Armour of Antiriad

A beautifully presented platforms-and-mapping arcade adventure. Collect up the components needed to activate an anti-radiation suit, clamber into it and destroy the alien mothercraft that is terrorising your tribe.

Bride of Frankenstein

Go off in search of Frankie's missing organs in yet another arcade adventure – this time the action is a little quirky, but fun nevertheless.

Uchi Mata

Probably the only judo simulation so far attempted on computer – and accuracy is the order of the day. To begin with, play is relatively easy, but serious thought as well as serious practice is needed if you are to progress to beating the more skilled opponents. An outwardly complicated game that offers rewards if you persevere.

The Spectrum and Commodore collections 'share' three more games:

Classic Snooker

A straightforward pot-the-balls baize production.

Skate Rock

An unpolished but playable skateboarding excursion where points are awarded for collecting flags and avoiding hazards on a series of urban courses.

Alleykat

A fast-action scrolling race game from C64 cult programmer Andrew Braybrook.

The Commodore collection is rounded off with:

Magic Madness

An unusual and appealing subterranean platform adventure.

Iridis Alpha

The excellent, fast and furious Jeff Minter shoot em up that includes sub-games where you can take a rest from the energy-collecting and alien-killing which forms the core of the main game.

Spectrum owners can thrill to the delights of tomb-exploration in the 3D arcade adventure *Pyracurse* or go on a little private investigation all of their own with *Contact Sam Cruise*.

Amstrad owners receive a different set of five games along with the five common titles:

Triaxos

Sets you in a fairly traditional 3D isometric adventure scenario on the quest to rescue a man who is capable of saving the human race. The pace of the game is a little slow and the puzzles less than mind-twisting, but there's enough to keep you busy during a rainy afternoon.

City Slicker

Off you go in pursuit of the equipment to defuse a terrorist bomb, following a fairly traditional arcade adventure format set in London and featuring many familiar landscapes.

Pulsator

A straightforward maze game that doesn't impress with the graphics but sets quite a tricky task involving the rescue of five captives.

Elektraglide

A race game with a difference – you race against time on a set of abstract courses, hindered by spheres, cubes and bolts of energy dropped from the skies. Different, but a bit dodgy...

Revolution

A tortuously tricky maze puzzle in which the player seeks to cross successive levels that make up a hostile 3D landscape, deactivating two cubes on each level. In control of a bouncing ball, the aim is to avoid falling into a bottomless chasm, escape the clutches of a variety of abstract but mobile aliens and touch first one cube and then the other within a rapidly diminishing time limit. Tricky stuff indeed.

Verdict: A fairly random selection of games presented here, some classics mixed in with some mediocre or less successful titles. Nevertheless, good value for money and a reasonable mix 'n' match of gamestyles.

Game Set and Match

Ocean

Amstrad £12.95 cs £17.95 dk
C64/128 £12.95 cs £17.95 dk
Spectrum £12.95 cs

Twenty two sporting events in one package – enough material to form the basis of a pretty neat armchair olympics that should keep joystick sports fans working out well into the New Year.

Eight games are common to all formats: ***Basketball***; ***Barry Mc Guigan's World Championship Boxing*** which sets you on the quest to beat Barry himself an offers the opportunity to set up the personality of your contender and train him between each bout in the lead up to the challenge fight; ***Jonah Barrington's Squash***; the classic coin-op joystick waggler ***Hypersports*** featuring six events; ***Ping Pong***, again from the arcades; ***Daley Thompson's Supertest*** – an octathlon rather than a decathlon, and ***Super Soccer***.

Commodore owners round off their work out with ***Snooker*** and tennis in ***Matchpoint***, while Spectrum and Amstrad athletes take a gentle bar-room break with ***Pool*** before going their separate ways onto the tennis courts, wih Konami's ***Tennis*** and ***Matchpoint*** respectively.

***Game Set and Match* offers a positive orgy of muscle-wrenching athletic action and represents stupendous value to anyone who prefers to work up a sweat in front of the TV rather than out there on the field or in the court. This is the only specialist, theme compilation on offer this Christmas and forms an essential, good value purchase if sporting simulations are your mainstay. Just about all the games on offer are high quality and were very well received on their first outing, but some of them do go back rather a long way...**

COMPUTER HITS 4
PRACTICE
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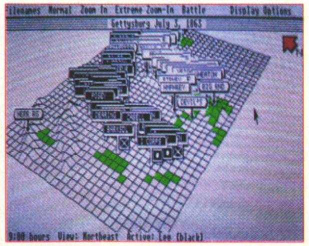
UNIVERSAL MILITARY SUCCESS?

Rainbird's *Universal Military Simulator* is designed to simulate a conflict between two forces on a user defineable terrain that can be viewed in three dimensions from any one of eight directions. The programme takes full advantage of the ST's GEM display and heralds a new era in 16-bit computer wargaming.

UMS is one of a small number of programs released during 1987 that show the true promise of 16-bit computing – the use of increased processor power to alter radically the games we play and the challenge they present. *Lords of Midnight*, from Beyond, introduced Landscaping and, by offering a window onto the world of Midnight, tempted many players who might otherwise have been put off by its 'strategy' associations. In a similar fashion, *UMS* puts more detail, more features, and more scope into the wargamer's hands than ever before, and does so with a style that could well open up the market to those previously uninterested.

There are five pre-set scenarios (with further scenarios to be made available in future). These range from Arbela in 331BC to Gettysburg (1863). Whether you play one of these or one of your own the program first enters the **Run Simulation** section, which in turn presents an **Issue Commands** phase and the **Movement/Battle Phase**. The computer can play one, both or none of the forces involved and can also be forced by the player to make tactical decisions.


Filenames Normal Zoom In Extreme Zoom-In Battle Display Options
Gettysburg July 3, 1863
9:00 hours View: Northeast Active: Lee (black)

Viewing the battle field of Gettysburg from one of the eight possible angles.

Once the desired strategy has been decided, a three-dimensional grid-map of the terrain is displayed, showing hills, ridges, depressions and other features. The map can be viewed from various distances and from various angles, but always from slightly above. Forces are shown on the map as markers pointing to a corner of a grid square, each marker indicating the type or commander of the unit.

Up to eight orders may be issued to any unit at the start of a simulation phase and these are processed by the computer with a pause between each of the eight stages, at which point you can check what's going on.

Many considerations are taken into account by the program including morale, terrain, and efficiency. Once a simulation phase has been entered you cannot change your mind about the orders given, which is perhaps a weak point but mirrors to a certain extent the irrevocable nature of commands given in real warfare. Battles can be saved to disk at any stage and can be resumed whenever the player has the inclination to continue.

UMS is not a simple program to master, but it repays careful study. The instructions are slightly too concise, simply because there's so much to cover, but anyone with an interest in setting up fantasy, theoretical, or actual conflict simulations will find it invaluable. It's also worth mentioning that Rainbird will consider marketing scenarios created by users, in much the same way as Incentive market graphic adventures created by their GAC utility.

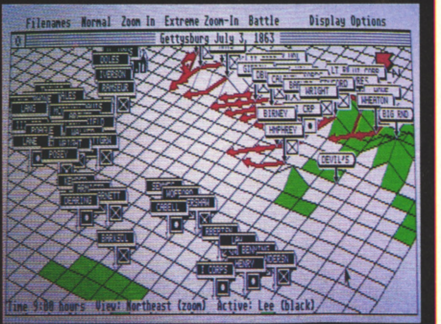
Running a simulation

When the **Issue Commands** phase is operative, the computer can be made to zoom in to show the detail of the unit's immediate surroundings. Clicking on one of the compass points in the left hand box will result in the unit being ordered in that direction for the first of its eight time segments. Options to have the unit attacking, defending or on reserve are also included in this part of the simulation.

The time segments are user definable – unless changed, the computer will run 10 minute segments. If, at the end of a time segment, two opposing forces are close enough to fight, the computer will display a table showing the result of the combat before moving onto the next phase. After every eight time segments, the computer will slightly re-arrange the units to conform to the 'No stacking rule' (which avoids piling units up on the same spot) and will then display a table showing the size of the remaining forces and casualty levels.

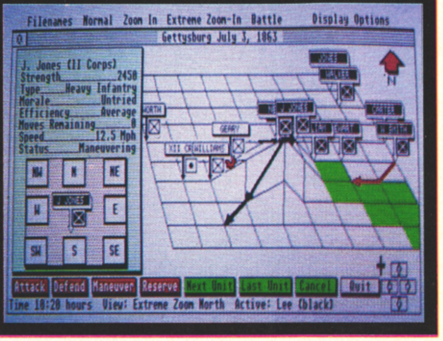
Zoom out...

During the battle, movement arrows can be displayed to show the player the intended route of his forces. These arrows, as well as battle indicators, landmarks or indeed the opposition's unit markers can be toggled on or off at will. Notice how it is a little difficult to see each unit's marker (and position) from this distance.


Filenames Normal Zoom In Extreme Zoom-In Battle Display Options
Gettysburg July 3, 1863
Time 9:00 hours View: Northeast (zoom) Active: Lee (black)

...and zoom in.

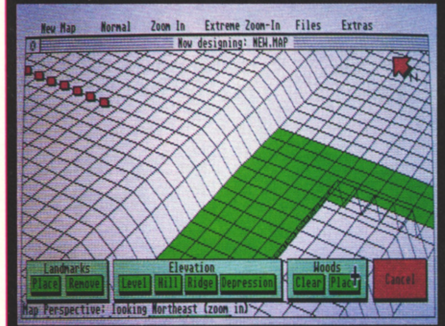
To aid the player when it comes to issuing orders, an Automatic zoom feature is incorporated which greatly increases the level of magnification and shows the unit and the surrounding area in much more detail. This magnified window can be scrolled in any of four directions using the cursors in the bottom right corner and can also be toggled on or off.


Filenames Normal Zoom In Extreme Zoom-In Battle Display Options
Gettysburg July 3, 1863
NW
N
NE
W
E
SW
S
SE
GEARY
N
Attack
Defend
Maneuver
Reserve
Next Unit
Last Unit
Cancel
Quit
Time 10:20 hours View: Extreme Zoom North Active: Lee (black)

```
J. Jones (II Corps)
Strength____________2450
Type_____Heavy Infantry
Morale___________Untried
Efficiency_______Average
Moves Remaining________0
Speed___________12.5 Mph
Status________Maneuvering
```

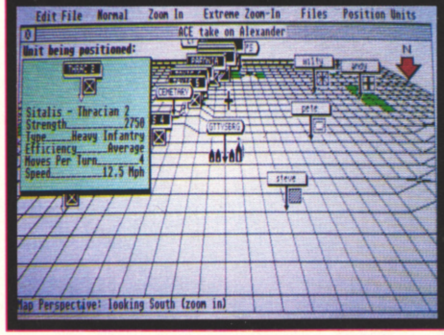
Creating a scenario

Have you ever wondered how Napoleon would have fared against Alexander the Great on the battle field at Gettysburg? Well even if you haven't, *UMS* gives the player the chance to create battles between forces of almost any size from absolutely any time.period on a terrain designed entirely by the player. That level of interaction really does give a wargamer scope to exercise his imagination and experiment with an infinte number of 'what if's'. Creating a scenario merely requires the player to design the terrain and the forces – and then put them together. The player is limited only by his own imagination when it comes to creating scenarios, and the manual shows examples of terrains representing both interior locations (e.g. castles) as well as landscapes.


New Map Normal Zoom In Extreme Zoom-In Files Extras
Now designing: NEW.MAP
Landmarks
Place
Remove
Elevation
Level
Hill
Ridge
Depression
Woods
Clear
Place
Cancel
Map Perspective: looking Northeast (zoom in)

Landscape gardening

Using the Automatic zoom, the player can close in on any area he wishes to change. Once a feature has been added to the map it can be manipulated , added to or removed as often as the player wishes. You can even alter the terrain of the pre-designed battlefields if you so desire.Terrains can be saved to disk so you could have several forces from several time periods fighting on the same battlefield (though not all at once).


Edit File Normal Zoom In Extreme Zoom-In Files Position Units
ACE take on Alexander
Unit being positioned:
CEMETARY
GTTYSBRG
willy
andy
pete
steve
N
Map Perspective: looking South (zoom in)

```
Sitalis - Thracian 2
Strength____________2750
Type_____Heavy Infantry
Efficiency_______Average
Moves Per Turn_________4
Speed___________12.5 Mph
```

Deploying your forces

Each unit from each force is dealt with in turn untill all the units have been placed and then the opposing force is dealt with. All that then remains is to decide the start and finish times, the length of the time segments and who'll control what.

Universal Military Simulator
Rainbird Software

Atari ST	£24.95	IMMINENT
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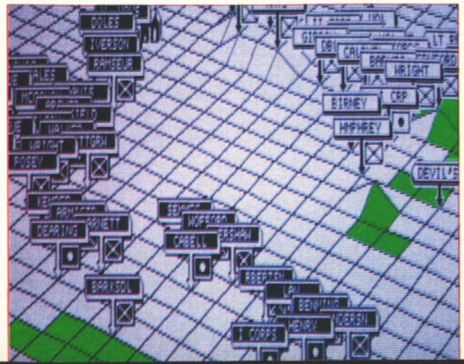
Additional scenario disks planned, but no release date as yet.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I CORPS
BIRNEY
HMPHREY
WRIGHT
DEVIL'S

Zooming in – making tactical decisions can be helped by viewing the forces from close range and from many angles.

Panel of Experts

No prizes for guessing what these members of the Bath Wargaming Group are staring at....Alexander vs Darius in 331BC.

We called in the local experts to pass judgement on *UMS*. Chris Brann, from the Bath Wargaming Group, together with Garrett Moorhouse, Mark Thursfield, Nick Gray, Mark O'Donnell, and John Csonka, put *UMS* through its paces and delivered their considered verdicts.

Display

Although initially impressive, members found the displays of the larger scenarios (e.g. Waterloo) confusing, despite the numerous Zoom options. This, combined with the difficulty of including rivers in the terrain, led to some doubt as to the program's suitability for setting up modern scenarios, where conflicts cover very large territories. 'The program's going to be great for anything pre-20th century because the battlefield's likely to be smaller. But take something like Battle of the Bulge with a huge playing area and you could find things getting very complex.'

Features

Some sort of randomising factor should be included, affecting the response time of certain units, for example, so that the 'nail-biting' aspect of wargaming could be emphasised. A further option suggested was the ability to designate parts of your own army as computer controlled, thereby simulating the action of independent commanders.

In addition the position of the commander-in-chief could be shown, with perhaps a viewpoint of the battlefield from his/her location. This would introduce some of the problems arising from fields of view, where the action is hidden from those who are directing it.

Everyone was very enthusiastic about UMS, despite the suggestions made above. 'I can think of some tremendous scenarios you could program on it', enthused Garrett Moorhouse, and members were particularly excited by the ability to 'blank out' the opposing army, making it invisible to the player. 'That feature makes the program ideal for guerilla warfare simulations, with irregular troops and limited intelligence on their location,' Chris pointed out.

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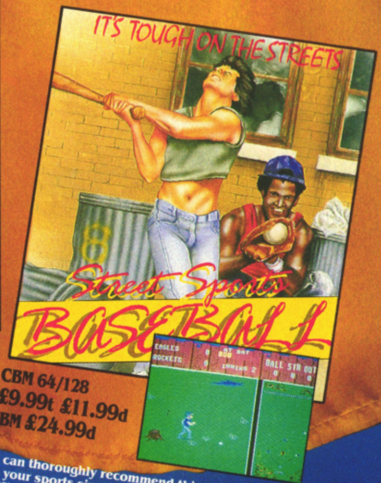
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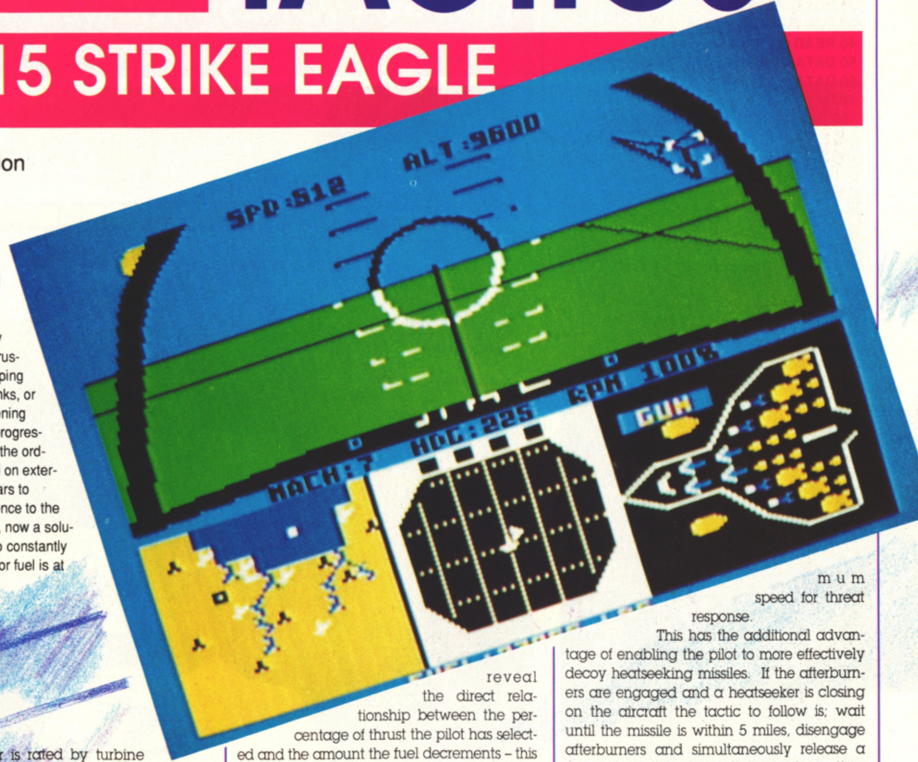
TRICKS 'N' TACTICS

There's a real Christmas hamper this month, full of succulent tips, pokes and maps on all those games you want to beat. We bring you *indestructibility* on Amiga Goldrunner, *infinite naughtyness* on Jack the Nipper 2, *infinite lives* on Re-Bounder, and much, much more.

F-15 STRIKE EAGLE

C64 version



Going crazy with frustration at always running low on fuel before you've taken out more than two enemy installations? Frustrated that dropping external fuel tanks, or otherwise lightening the aircraft by progressively using up the ordnance mounted on external pods, appears to make no difference to the fuel burn? Well, now a solution to having to constantly return to base for fuel is at hand!

Engine power is rated by turbine r.p.m's on a percentage basis. This corresponds to the keyboard as follows;

1	2	3	4	5	6	7	8	0
60%	65%	70%	80%	85%	90%	95%	100%	55%

Afterburners can be engaged by pressing the 'A' on the keyboard; this is quoted as increasing the fuel consumption at a rate of "about 60% higher than at the 100% rpm. level".

At the bottom centre of the screen cockpit layout is the fuel status display. This reads as pounds of fuel remaining and is constantly reeling downwards. Careful observation will reveal the direct relationship between the percentage of thrust the pilot has selected and the amount the fuel decrements – this relationship is as follows;

Keyboard	1	2	3	4	5	6	7	8	9	0
lbs fuel	4	5	6	7	8	9	10	11	12	32

So, if the pilot is running at 75% rpm's for example, the fuel status display will be going down in leaps of 7 lbs at a time. But if 55% rpm thrust is selected and then the afterburners engaged the aircraft's speed increases but the fuel burn rate remains at 3 pounds!

The pilot now has the range and endurance to do a great deal more damage to the enemy. He can fly at Mach Plus speeds on route to targets or fight at an optimum speed for threat response.

This has the additional advantage of enabling the pilot to more effectively decoy heatseeking missiles. If the afterburners are engaged and a heatseeker is closing on the aircraft the tactic to follow is; wait until the missile is within 5 miles, disengage afterburners and simultaneously release a decoy flare. Take immediate evasive action, ie, sharp turn, and the F-15 will always escape; the heatseeking S.A.M. will lose the extremely intense heat signature of the exhaust on afterburners when the much cooler signature of 55% thrust is selected and follow the flare instead.

And, with this tip, you can usually always afford to fly with afterburners engaged!

WARREN CANN,
East Finchley.

SUPER SPRINT

Make sure you always qualify on the Spectrum with this poke

```
1 REM Super Sprint poke
2 REM (c) J Humes '87
3 REM  ACE Dec '87
5 CLEAR 32767
10 PRINT AT 10;3; "START
'SUPER PRINT TAPE"
15 LOAD """CODE 65088
20 POKE 65108, 194
25 POKE 65092,37
30 FOR F=65400 TO 65413
40 READ a: POKE F;a: Next F
50 DATA 62,201,50,206, 192,195
60 DATA 0, 154,205,64,254, 195
70 DATA 44,255
100 RANDOMIZE USR 65408
```

JERMAINE HUMES, Enfield

NINTENDO

THE FIRST CHEAT?

This tip for Super Mario Brothers will prove invaluable for anyone having problems in the Nintendo classic

WORLD
1-1
TIME
160

After you die and go back to the title screen, instead of pressing 'start' press button A and then at the same time as holding button A down, press start. You will now be returned to the previous world you were on, so skipping all the levels before it. For example, if you are on level 4-2 and you die, do the above procedure and you will arrive at 4-1.

RICHARD ELTON, Stoke-on Trent

MYSTERY OF THE NILE

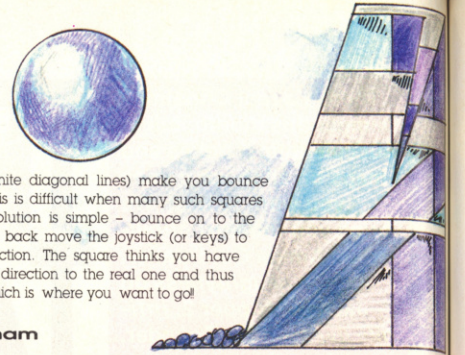
Mysterious passwords on the C64

Level 1 HD576172V
Level 2 HE576171V
Level 3 HF576170V

MITCH POMFRET, Stockport.

PLEXAR

Spectrum



Certain squares (black and white diagonal lines) make you bounce backwards one square, and this is difficult when many such squares are next to each other. The solution is simple – bounce on to the square and before you bounce back move the joystick (or keys) to move you in the opposite direction. The square thinks you have landed on it from the opposite direction to the real one and thus bounces you the other way – which is where you want to go!!

BEN SINCLAIR, Farnham

GOLDRUNNER

Amiga indestructibility

Press 1 to start a 1 player game, then fly forwards straight into the first building. When you crash, hold down the F5 key until you see the status screen. Then – with a little bit of luck – you can pass through anything unhurt.

MAX HARROWER, St. Austell

MISSION GENOCIDE

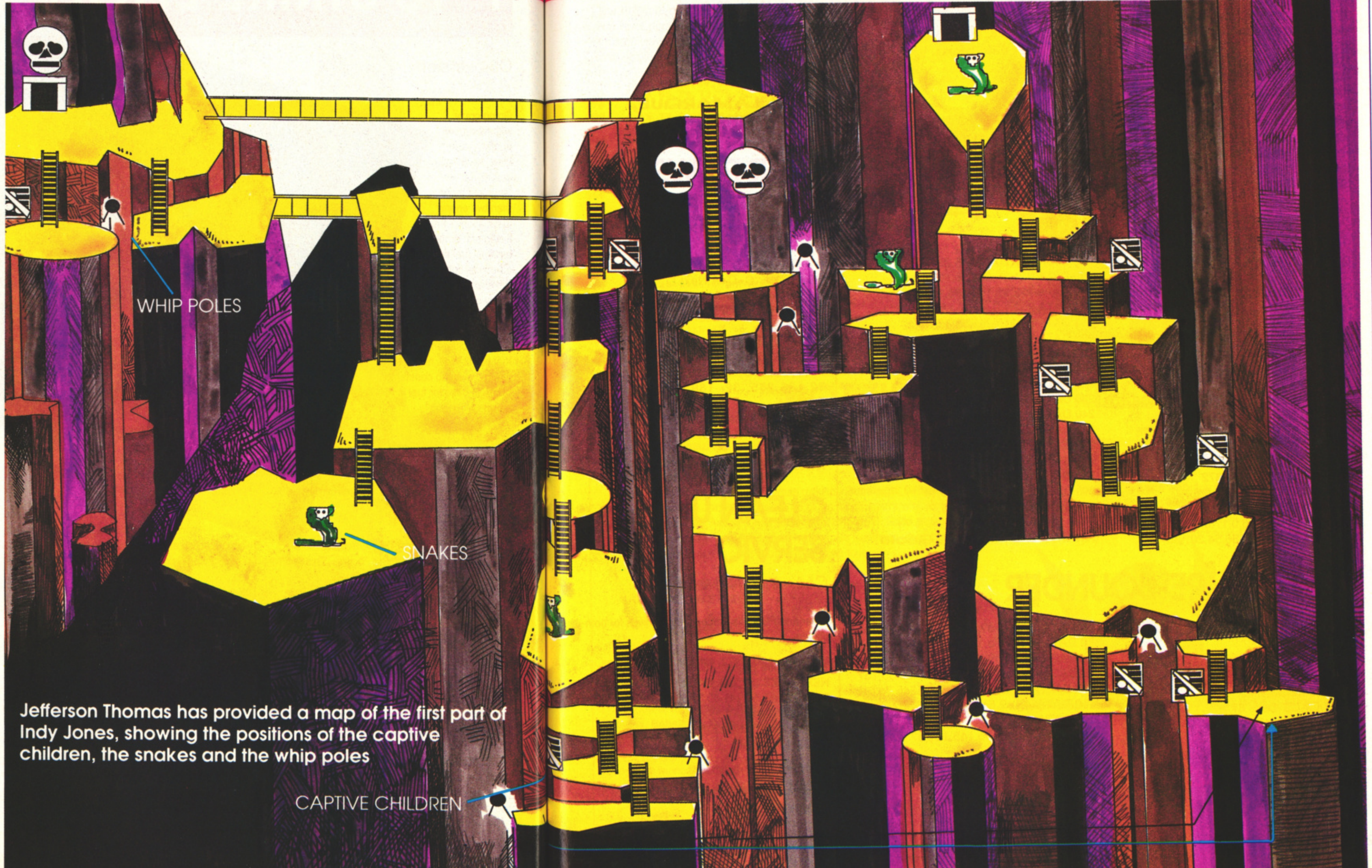
Choose your level on the Amstrad version

To activate the cheat mode type QED on the title screen then press keys 1-9; This gives access to these levels.

RICHARD JENNINGS, Abeaeron.

INDIANA JONES – THE MAP

PART 1



Jefferson Thomas has provided a map of the first part of Indy Jones, showing the positions of the captive children, the snakes and the whip poles

INFINITE NAUGHTYNESS!

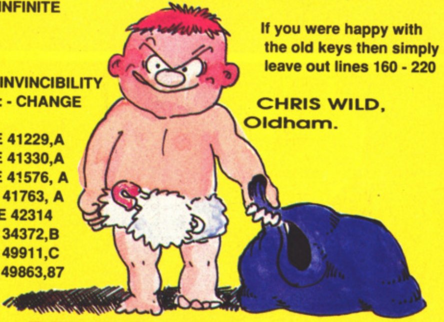
Infinite Naughtyness on the Spectrum Jack the Nipper 2 Plus the chance to change those 'orrid control keys.

```
10 REM JACK THE NIPPER 2
20 REM @ 1987 CHRIS WILD
25 REM ACE Dec '87
30 CLEAR 24575
40 LOAD "" SCREENS
50 LOAD "" CODE
60 POKE 43251, 0: REM (INFINITE
LIVES)
70 LET A=50 LET B=247
80 LET C=71
90 REM LINES 110 - 150:-INVINCIBILITY
100 REM LINES 160 - 220: - CHANGE
KEYS
110 POKE 41222, A:POKE 41229,A
120 POKE 41297, A:POKE 41330,A
130 POKE 41444,A: POKE 41576, A
140 POKE 41696,A:POKE 41763, A
150 POKE 41797, A; POKE 42314
160 POKE39820, B;POKE 34372,B
170 POKE 49884,C;POKE 49911,C
180 POKE 49897,C,POKE 49863,87
190 POKE 49891, 251
200 POKE 49905,253
210 POKE 49870,223
220 POKE 49857, 127
230 RANDOMIZE USR 34240
```

This results in the new control keys being:

Q-up
A-Down
O-left
P-right
M-fire
1-Quit
3-Music (on/off)

If you were happy with the old keys then simply leave out lines 160 - 220



CHRIS WILD, Oldham.

RENEGADE

Infinite lives on the Spectrum

```
1 REM ACE Dec '87
4 CLEAR  49151
5 LET T=0: LET W=0
10 FOR F=47872 TO 48000
15 READ A: POKE F,A
20 LET T =T+A*W: LET W=W+1
30 NEXT F
35 IF T<> 922903 THEN PRINT "ERROR IN
DATA": STOP
40 PRINT AT 10,3; "START RENEGADE
TAPE"
45 LOAD "" CODE
50 RANDOMIZE USR 47872
100 DATA 221,33,111,187,6,6,197
110 DATA 221,110,0,221,102,1
120 DATA 221,78,2,6,0,17,0,125
130 DATA 237,176,2356,54,201,30
140 DATA 150,205,0,125,221,35
150 DATA 221,35,221,35,193,16
160 DATA 222,33,103,238,17,0
170 DATA 252,1,0,4,237,176,175
180 DATA 50,115,255,33,80,187
190 DATA 17,23,255,1,3,0,237
200 DATA 176,33,83,187,17,0
210 DATA 93,1,50,0,237,176
220 DATA 195,244,254,205,0
230 DATA 93,62,195,50,76,255
240 DATA 33,12,93,34,77,255
250 DATA 201,253,33,58,92,62
260 DATA 36,50,87,160,49,79
270 DATA 93,251,195,203,92
280 DATA 197,228,16,213,228,24
290 DATA 19,229,12,31,229,14
300 DATA 45,229,25,81,229,11
```

MARC DONNELLY, Goole.

RE-BOUNDER

Infinite lives on the C64

Type it in the poke, save it, then load the game.

```
10 REM RE-BOUNDER
15 REM  ACE  Dec  '87
20 PRINT CHR $(147)
30 FOR FR= 14080 TO
14164: READ A: POKE F, A:NEXT F
40 SYS 14080
50 DATA 32,44,
247,32,108,245,169,19,141
60 DATA 134,9,169,55,141,135,9, 76,16
70 DATA 8,169,76,141,45,1,169,37,141
80 DATA 46,1,169,76,141,47,1,76,0,1,169
90 DATA 49,32,63,1,162,0,189,58,55,157
100 DATA 0,4,232,224,32,208,245,76,0
110 DATA 4,169,51,32,63,1,169,52,32
120 DATA
63,1,169,234,141,36,145,141,37
130 DATA
145,141,38,145,76,16,128,0,0,0
```

MR R GADD, Cheltenham

GRAND PRIX SIMULATOR

Cheat for the Amstrad

On the Title Screen, Type in TRACK,then the letter of the track you wish to start on.

JASON YATES, Birmingham

LAZER FORCE

Choosing levels on the C64

When *Lazer Force* has loaded, switch to the demonstration mode. When the demo is finished, hold down the Commodore key, and the keys 1 and 2 simultaneously. You will now be put straight on to a high level with 6 lives. This will not work, however, until the program demonstrates a level higher than level 3.

PAUL LAMARQUE, Birmingham.

STAR PAWS

Unlimited food on the C64

```
3 For I = 10497 to 10526 :READ A:
POKE, I,A :C=C+A Next I
4 For I = 512 to 519 :Read A :Poke I,A
:C=C+A NEXT I:IF C=3988 THEN SYS
10505
5 PRINT "ERROR IN DATA!!"
6 DATA169,2,141 5, 84,
76,1,82,198, 157,169,0,162,1,168,
32,186,255, 32, 189, 255, 32.
7 DATA
213,255,78,215,8,76,32,8,169,96,1
41,186,23,76,0,16.
```

R.MANOJ, W Finchley.

CLEAN UP SERVICE...

C64 – infinite lives

Enter and RUN this listing for infinite lives for both players.

```
1 FOR B=558 TO 584: READ A: POKE B,A:
NEXT: POKE 157,128: SYS 558
2 DATA 169, 59,141,40,3,169,2,141,
41,3,32,86,245
3 DATA 169,31,141, 207,1,96,169,  185, 141,
250, 141,76,68,68
```

THE MASTER HACKER, Clywyd

GAUNTLET

ST – infinite health

Load ST basic, then type in and save the listing. Insert your Gauntlet disk A with write-protect off and type RUN. Follow the on-screen prompts from then on.

RICHARD MONTEIRO, Yeovil

```
10      data 3f,3c,00,01,2f,3c,ff,ff
20      data ff,ff,2f,3c,ff,ff,ff,ff
30      data 3f,3c,00,05,4e,4e,de,fc
40      data 00,0c,48,7a,00,7a,3f,3c
50      data 00,09,4e,41,5c,8f,3f,3c
60      data 00,01,4e,41,54,8f,3f,3c
70      data 00,01,3f,3c,00,00,3f,3c
80      data 00,02,3f,3c,00,01,3f,3c
90      data 00,00,42,a7,2f,3c,00,02
100     data 04,00,3f,3c,00,08,4e,4e
110     data de,fc,00,14,23,fc,00,00
120     data 0d,70,00,02,05,42,3f,3c
130     data 00,01,3f,3c,00,00,3f,3c
140     data 00,02,3f,3c,00,01,3f,3c
150     data 00,00,42,a7,2f,3c,00,02
160     data 04,00,3f,3c,00,09,4e,4e
170     data de,fc,00,14,48,7a,00,93
180     data 3f,3c,00,09,4e,41,5c,8f
190     data 4e,f9,00,02,00,90,50,6c
200     data 65,61,73,65,20,69,6e,73
210     data 65,72,74,20,47,61,75,6e
220     data 74,6c,65,74,20,28,64,69
230     data 73,6b,20,41,29,20,69,6e
240     data 74,6f,20,64,72,69,76,65
250     data 20,41,2e,0d,0b,4d,61,6b
260     data 65,20,73,75,72,65,20,74
270     data 68,61,74,20,74,68,65,20
280     data 77,72,69,74,65,20,70,72
290     data 6f,74,65,63,74,20,74,61
300     data 62,20,69,73,20,6f,66,66
310     data 2e,0d,0b,0d,50,72,65,73
320     data 73,20,61,6e,79,20,6b,65
330     data 79,20,74,6f,20,63,6f,6e
340     data 74,69,6e,75,65,2e,2e,2e
350     data 0d,0b,0d,0b,0d,0b,07,00
360     data 0d,0b,50,72,65,73,73,20
370     data 74,68,65,20,72,65,73,65
380     data 74,20,6b,65,79,20,74,6f
390     data 20,63,6f,6e,74,69,6e,75
400     data 65,2e,2e,2e,0d,0b,0d,0b
410     data 52,70,4d,00
420     def seg=-1:for a=1 to 324
430     read a$:b=val("&H"+a$)
440     poke &H20000+a,b:q=q+b:next
450     if q<>23955 then 510
460     def seg=0:loc#=&H20056
470     input"Health (0 to 999999)";h
480     poke loc#,h
500     c=&H20000:call c
510     print"Error in DATA":end
```

QUEDEX

C64

Enter and run this listing for infinite units (when collecting bonus, press fire to access the bonus screen)

```
1 FOR B=528 TO 554: READ A: POKE B,A:
NEXT: POKE 157,128: SYS 528
2 DATA 169,29,141,40, 3,169,2,141,41,
3,32,86,245
3 169,  3,141, 206,1,96,169,181,  141,
96,46,76,235,2
```

THE MASTER HACKER, Clwyd.

ANARCHY

C64

Knock out the sprite to sprite collision detection with this little routine. Enter and RUN the listing before LOADING the game.

```
1 FOR B=379 TO 390: READ A: POKE B,A:
NEXT: POKE 157,128: SYS 379
2 DATA 32,86,  245,169,1
,141,29, 4, 96, 206,
202, 32, 76,162,124
```

THE MASTER HACKER, Clwyd.

HOT TIPS... HOT PRIZES!

Every month the amazingly generous people who run the Tricks 'n' Tactics section here at ACE **give away** software – not to any Tom, Dick or Harry, but to deserving causes. That means those people who have done a service to their fellow games players, by providing a **tip**, a **map** or a **poke** that has helped others to ever greater achievements.

This month Jefferson Thomas picks up **Bobsleigh, Deflektor, Driller, Dark Sceptre, Phantom Club and Nebulus** for his Spectrum. Why? Because his **Indiana Jones** map is the tip of the month, that's why. But there's more to come; Warren Cann receives **Nebulus** for his C64, Max Harrower gets **Leviathan** for his Amiga, Chris Shaw wins **Driller**,. R. Gadd gets a C64 **Nebulus** and Mark Donnelly gets **Driller** for his Spectrum.

So what are you waiting for? With prizes like these you'd have to be **STARK STARING BONKERS** not to share your knowledge with the rest of us. The address to send your masterworks to is

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Wanted

Don't know which games to tip, map or pole? We reckon that the following games are going to cause quite a few problems: **Stealth Fighter, Skate or Die, Nebulus, Bobsleigh, Driller, Buggy Boy.**

Arcades

Coin-op tip winner this month is Will Dowling, who gets **Driller** for his Spectrum in return for his copious **Spy Hunter tips**. Where are the rest of you? Don't be shy – we love to hear from you. And what about some tips on **Xenophobe**?

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IN THE ARCADES

A bumper set of tips on Spy Hunter wins WILL DOWNING of Daventry this month's arcade tip prize; if you think you can come up with anything as good, get it down on paper and send it in NOW!

SPY HUNTER

The road's features are random, without sequences that can be memorised. The surrounding countryside, however, changes colour in regular patterns. These territories have different features, their own weapons van and are of roughly equal length. Toward the end, the road forks into a dual carriageway.

Territories:
1 Bright green – sharp curves just before boathouse. short dual carriageway.
2 Yellow – sharp curve between bridges, short dual carriageway
3 Grey – mostly straight and wide, long dual carriageway.
4 Brown – sharp curves before and after bridge, short dual carriageway.
5 Dull green – straight and wide, long dual carriageway.

Territory	I	II	III
1	A/C	5	3
2	A	3	4
3	B	1	4
4	C	1	1
5	A	2	3

I - Weapon
II - Take left carriageway,
III - Take right carriageway

Weapons
A - Oil Slick
B - Smoke Screen

Tips
1.If, at the end of the timer countdown, you have reached a third territory without losing any cars or destroying any civilian vehicles, you will probably earn two extra lives.
2. While driving down a dual carriageway, press the WEAPONS VAN (if still lit) and let it catch up and overtake. When the road expands, move over to the left verge (the van will follow) and accelerate inside. Your scoring continues while travelling in the van, so this means an easy 500-700 extra points (not to mention your weapons topped up).
3. Use oil-slick sparingly; one quick squirt is enough to send an enemy agent sliding out of control.
4. Only shoot missiles when the helicopter is about to drop a bomb. Shot enemy agents come to a dead stop, so be ready to swerve as you shoot.
5. Switchblades will not sprout their deadly spikes on curves. Sometimes, the enemy agents unwittingly destroy each other. Anything explodes on contact with the Switchblade spikes, and it loses the spikes on the 'used' side.
6. The Mad Bomber destroys whatever he hits and, on the water
7. Barrel Dumpers sail straight into each other's barrels.
8. Weapons Vans are impervious to all enemy weapons - but vulnerable to yours, so don't shoot or slick them.
9. On the water, your steering is as loose as on icy roads. Sail slowly, because Barrel Dumpers drop barrels when directly in your path and Doctor Torpedo can only fire if some distance behind you. It also shoots backwards so, if you have no fiery oil-slick, slow down and let it overtake, then shoot it quickly. No more than two enemy boats will menace you at the same time, except when you first join the river (as many as four may come at you). If you miss the boathouse back onto the road, beware of an island in the middle of the river; pass it carefully on the right or skip over it at high speed.
10. If you go from an icy road to the water, stay there and bypass the boathouse. Shortly after the island, the land undergoes an instant thaw back to green - with safe roads.
11. Watch out for civilian vehicles in front of the van; it will swerve to avoid them, which may cause you to crash.
12. Bugs – when your car rolls back out of the van (on the right-hand verge), you can drive straight forward - through trees, across water and over broken bridges - without any trouble, and rejoin the road at any time. This is best used at high speed, and is good for locating a clear stretch of road (but don't forget to slow back down again!) No points are scored for travelling in this way and The Enforcer comes creeping up the opposite verge and starts shooting at you when level (about a dozen shots are fatal). Watch out for the road curving to the right and forcing you back onto the tarmac - there is no turning back after rejoining the road.
13. If the helicopter bombs you while driving 'cross country', the game resets itself and sacrifices your credit. A bonus derived from this is the elimination of The Enforcer and Doctor Torpedo, thus making things a little easier for you.
14. When in a bright green territory (see table), keep well in front of the weapons van until the sharp curves. Allow it to overtake you on this stretch and, as the road straightens out again, the warning BRIDGE OUT - DETOUR ON LEFT appears.. Quickly drive into the van and you will be carried onto the bridge-verge. When you reappear, stay still and wait. When The Enforcer slides up alongside, drive slowly away and keep to the iron verge. You will be shot at, but harmlessly; do not worry as you approach the broken gap because, as long as you keep to the verge, you will pass safely across. The Enforcer, howevr,, comes to a halt on the gap and gets left behind. That should be the last you see of it – and Doctor Torpedo.

ROAD BLASTER

1. The green and red bubbles are extra fuel.
2. When you reach the first lot of mines stay in the middle lane.
3. To increase your reserve fuel, fire at each orange car or motorbike once. This increases your multiplier by one every time. Once this reaches ten you will get more score, which will eventually increase your fuel reserve.
4. Purple cars are indestructible.
5. To catch the special weapon, wait till the jet flies over. Move over to the middle lane- and this will guarantee a special weapon.
6. When you catch the nitrous oxide burner do not use it straight away.
7. The special weapons are limited. You get about 50 rounds of UZ cannon, three nitrous oxide burners, three Cruise missiles and a shield which lasts about five seconds.
8. If you have tanks at the side of the road, stay in the lane you are in and you will not be blown to oblivion.

Darren Winn, Exeter

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We are pleased to announce a new reduced price point on the 1040ST-F which is now available for only £499 (inc VAT). The 1040 is a powerful computer with 1Mb of RAM and also includes a built-in 1Mb double sided 3½" disk drive. The 1040 has been designed for use on business and professional applications most of which require a high resolution monochrome or colour monitor. It does not therefore have an RF modulator for use with a domestic TV set. Modulators can be fitted for £49 (inc VAT).

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Advanced strategy game based on the James Clavell novel.

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MSX 64K
TAIPAN
ocean

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Mirrorsoft

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STRIKE FORCE HARRIER

Mirrorsoft

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Version	RRP	ACE price	Order code
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CBM 64 cass	9.95	**7.95**	A115CC
CBM 64 disk	14.95	**11.95**	A115CD
Amstrad cass	9.95	**7.95**	A115AC
Amstrad disk	14.95	**11.95**	A115AD
Atari ST disk	24.95	**19.95**	A115ST

MIRRORSOFT
STRIKE FORCE
HARRIER

SOLID GOLD·

US Gold

A collection of five fantastic titles: Infiltrator, Leaderboard, Gauntlet, Ace of Aces and Winter Games. Hours and hours of entertainment.

Version	RRP	ACE price	Order code
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CBM 64 cass	9.99	**7.95**	A122CC
CBM 64 disk	14.99	**11.95**	A122CD
Amstrad cass	9.99	**7.95**	A122AC
Amstrad disk	19.99	**15.95**	A122AD

MASK

Gremlin

Addictive gameplay based on the TV cartoon.

Version	RRP	ACE price	Order code
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CBM 64 cass	9.99	**7.95**	A101CC
CBM 64 disk	14.99	**11.95**	A101CD
Amstrad cass	9.99	**7.95**	A101AC
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XOR

Logotron

Ingenious maze game, packed with mind-bending puzzles. Original and very compulsive. Ace Rated 927.

Version	RRP	ACE price	Order code
Spectrum cass	7.95	**6.25**	A119SC
CBM 64 cass	9.95	**7.95**	A119CC
CBM 64 disk	12.95	**10.95**	A119CD
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Exciting shoot-em-up featuring huge, evil guardians at the end of each level.

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CBM 64 disk	12.95	**10.95**	A110CD
Amstrad cass	8.95	**6.95**	A110AC
Amstrad disk	14.95	**11.95**	A110AD

GAME OVER
COMMODORE 64 · 128
Imagine
the name of the game

SOLOMON'S KEY

US Gold

Wizard coin-op game packed with puzzles and invention.

Version	RRP	ACE price	Order code
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CBM 64 cass	9.99	**7.95**	A104CC
CBM 64 disk	14.99	**11.95**	A104CD
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Amstrad disk	14.99	**11.95**	A108AD
Atari ST disk	24.99	**19.95**	A108ST
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Mirrorsoft/Mindscape

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Version	RRP	ACE price	Order code
CBM 64 disk	14.95	**11.95**	A106CD
Amiga disk	29.95	**24.95**	A106AM

ARKANOID

Ocean

Really enjoyable Breakout clone with 32 levels.

Version	RRP	ACE price	Order code
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CBM 64 cass	8.95	**6.95**	A112CC
CBM 64 disk	12.95	**10.95**	A112CD
Amstrad cass	8.95	**6.95**	A112AC
Amstrad disk	14.95	**11.95**	A112AD
IBM compatible	19.95	**15.95**	A112PC
Atari ST disk	19.95	**15.95**	A112ST

ARKANOID
TAITO
Imagine
the name of the game

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A compilation of superb titles including Ball Blazer, Eidolon, Knight Games, Highway Encounter, and Trail Blazer. Stunning value.

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CBM 64 cass	9.99	**7.95**	A102CC
CBM 64 disk	14.99	**11.95**	A102CD
Amstrad cass	9.99	**7.95**	A102AC
Amstrad disk	14.99	**11.95**	A102AD

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Star Games II
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ACE PINK PAGES

In these Pink Pages are the first of our regular Buyers Guides to home computer hardware and software. The guide is intended to give you the information you need to buy the right hardware and software at the right price. We've listed details of 12 basic machines and their various models, plus consoles; and in the software section we've given the lowdown on 50 games we recommend.

Each month we'll be updating the information to keep you informed of the swings and roundabouts of prices and availability. We'll also be spotlighting a particular area; look out next month for a guide to peripherals.

We've also got the first of our *Reader to Reader* pages; in here you'll be able to place your own small ads – *free, gratis and for nothing.* Is there a better place to sell your machine when you want to upgrade? In *Reader to Reader* you'll also find Adventure Helpline (a boon to all those stuck in a dark room with a goblin).

We hope the ACE Pink Pages will prove a valuable reference guide to anyone making a computer hardware or software purchase, and to those seeking help from or contact with other readers. They're *your* pages; so please write in and make use of them.

The ACE buyers' guide is essential reading for anyone who is considering buying a new computer, whether it will be your first ever foray into the micro market, or you hope to upgrade your current system. We've compiled a list of features and specifications for all the models suitable for home use in the shops. Graphics, sound, software availability, prices, bargains..It's all here.

Before buying

Even if a new computer is only a dream at the moment, the buyers' guide will make it clear just what's on offer, and help you decide which system is best for you. But before you rush out to the shops there are two things you need to consider carefully.

Firstly, how much you can afford to spend, whether it's in cash, hire purchase, or plastic money. Remember to leave yourself a bit of money/credit over for software, and if possible, for peripherals. It may only be a couple of months before you decide you can't cope any longer without a disk drive, or a monitor.

Secondly – and just as important – what do you want to use the computer for? Are you really going to learn to program? Do you sincerely want to put your home accounts on computer, or produce the company newsletter? Do you want a 'serious' micro, a games micro, or something that combines a bit of both? Think carefully about these points before you buy; there's nothing worse than being lumbered with a machine that doesn't really suit your purposes.

The ACE Buyers Guide can't make your mind up for you; but we can give you the facts that will allow you to make a sensible decision.

Where to buy

Basically, you have four choices:

- the high street chain store – Dixons, Currys, Boots, etc.
- the independent computer specialist shop
- a mail order company
- second hand.

In the high street stores you should get a fair price for your machine; you should also be able to take it away with you immediately. Furthermore, many stores offer attractive 'bundles', giving you lots of extra goodies with the basic machine. But the salesperson behind the counter won't necessarily be very knowledgeable about the systems you wish to choose between. Also, it is not always possible to have an in-depth demonstration of the various machines on display.

In an independent specialist shop, the salesperson could well know the machines better and be able to demonstrate them more fully but you might have to pay slightly more for the system.

If you buy on mail order, you can't, of course, have the machine immediately and you can't have a demo of it, but you might come across a cheaper price. If you order your micro through the post, make sure you know exactly what components you are getting before you send off your money, send a covering letter with any money and keep copies of those letters, and keep a note of the cheque/PO number. If possible, stick to a mail order company you know and trust.

Buying a micro second hand has advantages other than price. Frequently, the previous owner will be selling software and possibly some peripherals with the machine, so you can start up with a more complete system. Obviously, however, software and add-ons being sold with the machine will bump up the asking price, so check the price of the individual components first – they may not be the bargain they seem! Second hand micros can be found on offer in the specialist computer magazines, usually in a classified advertising section towards the back. It's a good idea to try to buy from someone who lives reasonably near you, so that you can see the machine before you part with your money and have a demonstration.

Again, before you pay, check what you're getting for your money, and even if you're buying from your best friend, it would be no bad thing to put down in writing what you'll pay for what. Remember that you run the same risks buying second hand computers as second hand cars; you may end up with a duffer.

Setting up

Apart from the computer itself, there will be plenty of other items you need to buy in order to get your system up and running. These can all too easily be forgotten in the excitement of buying the computer, so go through this checklist now – you don't want to spend all Christmas waiting for the shops to open before you can load up your favourite game.

● **Plugs**: most micros don't come complete with them. Nor do disk drives, tape decks, monitors...

● **Fuses:** check that the plug has the right fuse in it (normally 3 amp) before you get it home.

● **Leads:** yes, the micro may well work with the television, but is the correct lead in the packaging or do you need to buy it separately?

● **Adaptor/trailing socket:** if the number of plugs needed comes to more than one, are you sure that your power points can cope? An adaptor will almost certainly be essential, and a trailing socket (box with three or four plug sockets on it) is a good idea, because there is a Murphy's Law of computing which states that a micro will always use more power sockets than you expect

● **Y splitter:** jolly handy if you're going to use the micro with the television. A Y splitter is a box which fits into the TV socket (on the TV itself) and will take both the TV input lead and the computer lead. You can then switch between one and the other fairly easily, rather than fumbling blindly behind the television for half an hour when you want to watch *EastEnders*.

Where to set up

Custom-made mahogany-look computer desks are for the unbearably affluent only. Basically, don't set the machine up so that the screen faces a window (you won't get to see much if you do). Remember that cables between keyboards/monitors/tape decks/disk drives are usually too short to be more than six inches away from each other, and that if the keyboard ends up sitting on the floor the cat will decide it's an ideal sleeping spot. Don't spill coffee (or indeed, anything stronger) over any of the units, particularly not the keyboard. Don't wave magnets near your disks or the drive, and if you smoke, don't drop ash over any of it.

Categories

We've tried to include details of all the salient features of the micros on the market, divided into particular categories.

● **Memory**: this refers to the total amount of Random Access Memory (RAM), not the amount left free to the user.

● **Packaging:** it's worth checking the details here against the price. A micro that appears expensive may come ready packaged with a monitor, tape deck or disk drive.

● **Disks:** does the machine use disks? If so, how much do they hold and how much do they cost? Is the disk drive built-in or external? Are add-on drives available? Is much software available on disk?

● **RRP:** all recommended retail prices we've quoted include VAT

● **Display:** many home/games micros are easily hooked up to a television, and this can be the most convenient and least expensive option. However, all computers (except the games consoles) can be connected to a dedicated monitor, which will give you a clearer picture, and save household arguments if you plan to use the family TV.

● **Graphics:** *Resolution* indicates the quality of screen display possible (the higher the figures the better);*Palette size* refers to the total number of colours available on the machine; *Colours* to the number that can be used on screen at any one time. *Sprites* and *Scrolling* refer to built-in hardware features (particularly useful for games) rather than effects that can be programmed in.

● **Sound:** tells you what kind of chip the computer uses to produce sound, what the speaker quality is like, and whether it can be used with the MIDI standard for linking computers and musical instruments

● **Hardware:** lets you know what the keyboard is like – can you use it for serious purposes?; tells you if it's possible to use a joystick or a mouse; and lists the ports in to which expansion devices can be plugged.

● **Software:** gives you the lowdown on the amount and quality of software available for the machine at the moment in the various categories, and also makes a prediction about the level of future support.

● **Buying tips:** guidelines on what the bargains might be and where they might be picked up. Plus information on your rights under guarantee and what to do if the machine breaks down (God forbid!)

Hardware

Acorn Archimedes

Models: Archimedes 305, 310 and 310M

Package: Keyboard, mouse and drive; keyboard, mouse, drive plus monitor (colour or mono); 310M – M denotes inclusion of PC emulator

Memory:305 512K
310
1Mb

Processor: Acorn ARM

Recommended Retail Price

305 no monitor	£801.60
305 mono monitor	£859.10
305 colour monitor	£1031.60
310 no monitor	£889.00
310 mono monitor	£946.50
310colour monitor	£1119.00
310M no monitor)	£958.00
310M mono)	£1015.50
310M colour	£1188.00

Disks

Format	3 1/2 inch
Price	Around £3.00
Capacity	800K formatted
Software	All on disk
Add-on drives	Yes
Built-in	Yes

● **Performance**
Good and fast

Graphics

Resolution	either 320x256 or 640x256 or 640x512 (multi-synch monitor)
Palette	4096
Colours	from mono up to 256 (320x256) or 16 (640x512)
Display	
TV	No
Monitor output	mono – composite video colour – RGB + sync
Monitor supplied	depends on package bought (see below)
Options	Acorn dedicated. 14 inch medium resolution, colour; 12 inch high res, mono

● **Performance**

Sprites	1
Scrolling	No
Speed	Fast

Sound

Sound chip	Custom chip
Speaker quality	Good
MIDI	Yes
Stereo output	Yes
Channels	16 (8 stereo pairs)

● **Performance** 6 octaves, one internal loudspeaker

In brief...

The Archimedes is at the cutting edge of micro technology. As such it is not cheap; nor does it have the software base of longer-standing machines. It's very exciting, but one to leave to the real enthusiasts for the time being.

Hardware

KEYBOARD: 103 keys, programmable auto-repeat rate. Keyboard has surprisingly cheap feel given quality of machine

JOYSTICK/MOUSE: 3 button mouse supplied; joystick not supported

PORTS: RS 423 serial ● Centronics compatible parallel ● 9-pin mouse socket ● 3.5mm stereo jack ● 64 way Din ● 41612 expansion porv ● IEC 320 video outlet ● I/O interface (BBC compatible)

Software

EXISTING BASE: One game (Zarch), couple of databases (from Minerva Systems), art packages under development

CURRENT RELEASES: See above:

GAMES: One arcade tiitle (ACE Rated 979) and at least one more on the way. A couple of adventures in development.

GRAPHICS: Potential is enormous; currently a couple of packages in the pipeline

MUSIC: Again, enormous potential. Very little activity as yet, however.

SOFTWARE FORMAT: Disk only

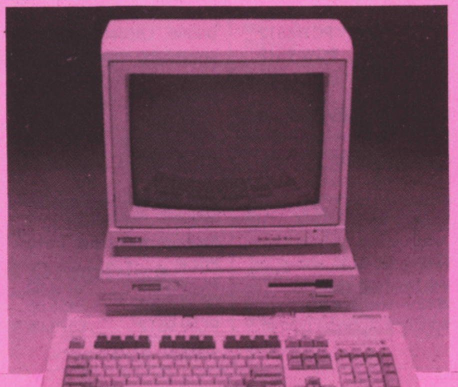
PROSPECTS: Very good, but not necessarily for games market

Buylines

BEST BUY PRICE: As RRP

SECOND HAND AVAILABILITY: Not yet

MAINTENANCE: One year's guarantee. Faulty machines – return to dealer



BBC Master series

Models: Master 128, Master Compact

Package:
128 – keyboard plus monitor.
Compact – available in four packages:
(1) Complete system including keyboard (with integral disk drive), monitor and printer.
(2) Keyboard/drive only
(3) Keyboard/drive plus mono monitor.
(4) Keyboard/drive plus colour monitor.

Memory: 64K main RAM
64K sideways RAM

Processor: 65C12 (6502 compatible)

Recommended Retail Price

128	£457.35
Compact	
Entry system	£399.85
Mono system	£457.35
Colour system with printer	£629.85 £1084.45

Disks

Format	
128	5 1/4 inch
Compact	3 1/2 inch
Capacity	
128	320K formatted;
Compact	640K formatted
Software	most available on disk
Price of Blank Disks	£1.00 to $3.00 (less in bulk)
Add-on drives	yes
● **Performance**	good
Built-in	
128,	no;
Compact,	yes

Graphics

Resolution	640x256 mode 0; 320x256 modes 1 and 4 160x256 modes 2 and 5
Palette	16
Colours	modes 0, 3, 4 and 6 have 2 colours modes 1 and 5 4 colours modes 2 and 7 8 colours

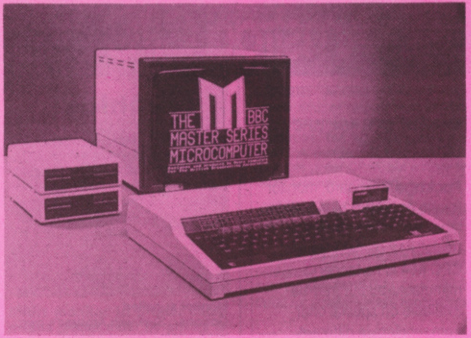
Mode 7 is a "teletext" text and block graphics mode. Modes 3 and 6 are text only.

● **Performance**

Sprites	none
Scrolling	no
Display	
TV	yes
Monitor output	Composite video
Monitor supplied	
128,	no
Compact,	yes (see Package above)
Monitor options	Acorn dedicated models
Spaghetti factor	
128	average
Compact,	low

Sound

Speaker quality	good
Stereo output	no
MIDI	third party interfaces available
Channels	4



● **Performance** good

Hardware

KEYBOARD: 64 keys plus 10 function keys and 19 key numeric keypad. Standard raised keys with audible tactile feedback.

JOYSTICK/MOUSE: Non-Atari standard analogue to digital ports can be used for joysticks. Takes most third party mice

In brief...

Master series intended as educational/scientific tools, with these two machines at the "homey" end of the range. Games/entertainment not recommended as main use, as leisure software is not always converted to BBC format.

PORTS:
128 – 2 enhanced Acorn cartridge slots ● disk interface ● Econet interface ● Centronics compatible parallel printer ● RS432 serial ● phono socket ● UHF channel ● Composite video ● RGB TTL ● 20 way IDC connector user port ● 40 IDC connector for second processor ● cassette interface ● 15 way D-type analogue to digital

Compact – disk interface ● Centronics compatible parallel printer ● 50 way edge connector expansion phono socket ● Composite video ● RGB TTL ● joystick/mouse

Software

EXISTING BASE: good, but only because of BBC compatibility

CURRENT RELEASES: steady flow, but not too numerous.

PROSPECTS: good for education and similar; poor for games

Main profile is in educational/scientific arena; games tend to be either BBC B games (and thus configured into 32K Ram) or bigger (not necessarily better) versions of BBC B titles.

GAMES: The Master arcade scene's poor, with much dating back to old Beeb days. The same goes for adventures, but memory limitations of BBC even more apparent here.

GRAPHICS: a few; one or two of them outstanding.

MUSIC: fair selection

Cassette loading
supported only on 128

Buylines

MAINTENANCE: Within one year's guarantee, return faulty machines to dealer

BEST BUY PRICE:: As RRP

SECOND HAND AVAILABILITY: Limited. Try education magazines as well as computer press.

Both machines are upwardly BBC B compatible. Compact has built-in disk drive tucked under keyboard. Distinctive BBC brown and cream styling.

Amstrad CPC

Models CPC 464, CPC 664, CPC 6128

Package Keyboard, monitor (mono or colour) plus built-in tape/disk, plus software (usually 12 games), joystick. CPC 664 is no longer manufactured but may be available on special offer from retailers in different packaging configurations.

Memory:	464/664	64K
	6128	128K

Processor Zilog Z80

Recommended Retail Price

464 mono	£199.99
464 colour	£299.99
664 unavailable	
6128 mono	£299.99
6128 colour	£399.99

Disks

Format	3 inch, flippable
Capacity	180K formatted per side
Software	Yes, although disk versions may be harder to find in shops than tape.
Price	about £3.00
Add-on drives	Amstrad DDI-1 first drive for CPC464, Amstrad FD-1 or third party drives for any CPC.
Built-in	464 no 664/6128 yes.

● **Performance**
Reliable and quick

Graphics

Resolution	Mode 1	320x200;
	Mode 2	640x200
	Mode 0	160x200
Palette	27	
Colours	mode 1	4
	mode 2	2
	mode 0	16

Display

TV	Yes
Monitor supplied	Yes

Options Stick with Amstrad's own; need external power supply to use any independent models.

● **Performance**

Sprites	None
Scrolling	Vertical (rough) and Horizontal (very rough).
Speed	Average to slow

Sound

Sound chip	AY-3-8912
Speaker quality	Adequate
Stereo output	Yes, need cable
MIDI	No
Channels	3

● **Performance**
Has 8 octaves, but is basically as for the Spectrum +2 – but it does have stereo output, if a little rudimentary

In brief...

The Amstrad CPC family is a value-for-money and versatile breed. You get everything you need and the whole business needs just one plug. They'll do sterling service as games micros, but they are also able to turn their hands to more serious matters.

Hardware

KEYBOARD: 74 raised plastic keys with audible tactile feedback. Separate cursor cluster and redefinable numeric keypad. Very useable for word processing etc.

JOYSTICK/MOUSE: Standard 9-pin D-type. Third party mouse devices are available.

PORTS:CPC 464 ● PCB edge connector – takes disk drive and RS232C interface ● Centronics parallel ● 6-pin Din RGB with sync luminance ● sync3.5mm stereo socket ● joystick ● cassette port ● CPC 664/6128 ● PCB edge connector – takes RS232C interface ● Centronics parallel printer ● Add-on disk socket ● Joystick ● Cassette port ● RGB with sync luminance ● sync 3.5mm stereo socket ● expansion/I/O ● TV

Software

EXISTING BASE: Good, even if not as large as Spectrum or C64

CURRENT RELEASES: Reasonable; most major Spectrum and C64 titles are converted.

GAMES: Good, but some converted titles run slower than the Spectrum or C64 originals. Adventures OK, but Infocom considering withdrawing support for this format.

GRAPHICS: Good selection of titles.

MUSIC: Reasonable number of titles, but poor in comparison with C64.

SOFTWARE FORMAT: 464 tape, using built-in tape deck; 664/6128 disk, using built-in disk drive

SOFTWARE LOADING: Tape loading is reasonably quick and reliable; disk loading fast and reliable.

PROSPECTS: Uncertain. After initial interest, sales of CPC software have dwindled but there should still be areasonable amnount of games and utilities around.

Buylines

BEST BUY PRICE: Curry's is offering £20 off both and mono versions of the 464 in part exchange for an old computer. Dixon's has colour 6128s at £349.99. You could also try for a CPC 664 for around £60.00, but these are becoming increasingly rare. If the extra memory of the 6128 is not important, the CPC664 can represent a bargain if you can find one.

SECOND HAND AVAILABILITY: Very good. Often plenty on offer in classified ad sections of specialist magazines

MAINTENANCE: One year's guarantee. Faulty machines return to dealer. 664 statutory rights only.

Amstrad PCW

Disks

(8256, 8512 Drive A)

Format	disks
Format	3 inch flippable
Capacity	180K formatted per side

(8512 Drive B, 9512)

Format	3 inch double-sided
Capacity	720K formatted
Price of Blank Disks	about $3.00
Add-on drives	from third party companies only, mainly 5.25 inch format.

Add-on drives have been produced to take 5.25 inch disks, so that standard ASCII files in CP/M format can be transferred to the PCW machines.

● **Performance**

Reliable, reasonably fast and quiet. In addition the machines reserve some of their memory for use as a RAM drive, with obvious benefits in speed.

Graphics

Display

TV	no
Monitor:	supplied monochrome only,giving 90 column text display.

Resolution	720x256
Palette	
8256, 8512	green and black;
9512	black and white
Colours	N/A

Models:	PCW8256 PCW8512 PCW 9512

Package:
8256 – keyboard, monitor with built-in single disk drive, dot matrix printer, Locoscript 1 word processing software, CP/M operating system, DR Logo.
8512 – as 8256 above but with two built-in drives.
9512 – restyled keyboard, monitor with single built-in disk drive, daisy wheel printer, Locoscript 2 word processing software,

Memory:

8256	256K
8512	512K
9512	512K

Processor: Zilog Z80

Recommended Retail Price:

PCW 8256	£343.85
PCW 8512	£458.85
PCW 9512	£573.85

● **Performance`** N/A

Sound

Sound chip	none as such
Stereo output	no
Channels	N/A

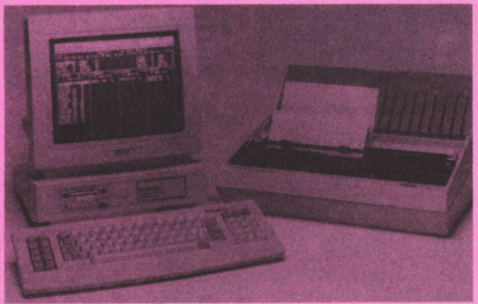
● **Performance** beeps only. Some third party sound enhancement modules available.

In brief...

The PCW range was designed as a word processing machine rather than a general purpose computer. Non-word processing software was produced after sales rocketed. Not recommended as a games machine

Hardware

KEYBOARD: Includes extra keys for word processing functions. Keyboard in 9512 a substantially improved version.



JOYSTICK/MOUSE Not supported. Joysticks and mice can be attached via a separately bought interface.

PORTS: One expansion port takes RS232C serial and Centronics Parallel interface ● Printer port for bundled printer
SPAGHETTI FACTOR: Low. Only one plug needed. Cable from keyboard to monitor; two cables from monitor to bundled printer.

Disk drives are set "vertically" in monitor casing to right of screen.

Short monitor to printer cable means printer must be placed to left of monitor. Monitor to keyboard cable means keyboard sits naturally 6 inches to a foot in front of monitor.

Software

EXISTING BASE: not wide but generally programs of good quality. Appeals to specialist/niche type markets.

CURRENT RELEASES: very few.

PROSPECTS: would be poor but for launch of 9512. Revival will depend on new machine's popularity.

GAMES: Arcade titles are very scarce and, of course, monochrome only. Adventures are slightly more numerous, but again the range is small. A number of Infocom titles available under CP/M, but outlook for future releases uncertain.

GRAPHICS: very few but some low-end CAD-type software available.

MUSIC: none – machines not configured as such.
SOFTWARE FORMAT: Disk only. Good for small business applications.

Buylines

MAINTENANCE: One year's guarantee. Faulty machines return to dealer

BEST BUY PRICE: As above. Generally not sold below RRP.

SECOND HAND AVAILABILITY:
PROSPECTS: for 8256 and 8512, good. 9512 too new for second hand market as yet.

Apple Macintosh

Models:	Macintosh SE Macintosh II

Package: Monitor with built-in cpu and disk drive, separate keyboard

Memory: 1Mb

Processor:

SE	Motorola 68000
II	Motorola 68020

Recommended Retail Price

SE	£2,294.25 upwards
II	£4,329.75 upwards

Disks

Format	3.5nch
Price	Around £3.00
Capacity	800K
Software	All on disk
Add-on drives	Yes
Built-in	Yes

● **Performance**
Fast and reliable, but watch out for US software that hasn't been thoroughly tested

Graphics

Resolution	SE –	512x342
	II –	640x480
Palette		
	SE –	black, white and grey shades
	II	with colour monitor – 16 million

Colours with colour monitor – 16 to 256

Display

TV	no
Monitor output	integral monitor
Monitor supplied	Built in
Options	
SE	use dedicated model only
II	Apple hi-res monochrome or AppleColor hi-res RGB

● **Performance**

Sprites –	None
Scrolling –	None
Speed	Reasonably fast

Sound

Sound chip	Apple (ASC)
Speaker quality	Good
Stereo output	
SE	No;
II	Yes
MIDI	Third party interfaces available.
Channels	4

● **Performance** Good

Hardware

KEYBOARD: Supplied 81 keys including function keys and numeric keypad. Optional extra is the Apple Extended keyboard, with 105 keys

JOYSTICK/MOUSE: Joystick not supported. High quality one-button mouse supplied with machine

PORTS:
SE 2; Apple Desktop Bus connector ● 2 RS232/RS422 serial ● External disk drive ● 96-pin Euro-Din expansion slot SCSI – DB-25 connector ● External audio amplifier

II;2 RS232/RS422 serial DB-25 SCSI T

Software

EXISTING BASE: Wide range of software exists in virtually all fields except games.

CURRENT RELEASES: adequate; largely of US origin and in the business or DTP field

GAMES: very few arcade games, but adventures are more plentiful

GRAPHICS: lots of interesting software for those involved in DIY publishing

MUSIC: Very well supported for MIDI software – but it's expensive stuff

SOFTWARE FORMAT: All software supplied on disk

SOFTWARE LOADING: Quick and reliable

PROSPECTS: Excellent, especially in business and DTP

Buylines

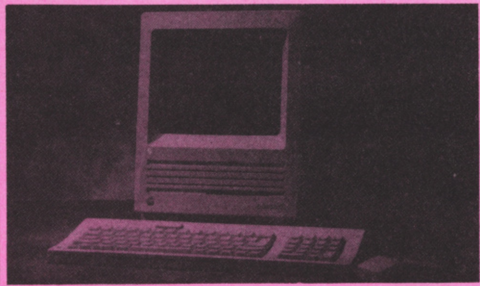
BEST BUY PRICE There isn't much aof a discounted market in Macs; you generally have to pay the list price

SECOND HAND AVAILABILITY: Reasonable, but not exactly cheap. Check small ads in specialist magazines.

MAINTENANCE: One year's guarantee. Apple offers Applecare – 'insurance' you take out to cover cost of repairs after guarantee has lapsed.

In brief...

A very expensive up-market machine for those keen on desk-top publishing, wimp systems, and up-market software. If you can afford it, great – but remember that software is very expensive. Games are lmostly imited to icon-driven adventures (little arcade action software available). Good for MIDI musicians, but be prepared to pay through the nose.



Atari ST

Models: Atari520STFM, 1040STF, Mega STs

Package: 520STFM and 1040STF keyboard with built-in disk drive

Memory:

520STFM	512K
1040STF	1Mb
Mega ST	2 or 4Mb

Processor:
Motorola 68000

Recommended Retail Price

520STFM	£299.99
1040STF	£499.99

▨ Discs

Format	3 1/2 inch
Capacity	360K formatted (1/2 Mb drive) 720K (1Mb drive)
Software	only supplied on disk
Price of Blank Disks	about £3.00
Add-on drives	yes
Built-in	yes

● **Performance** Fast and reliable

▨ Graphics

Resolution	high res 640x400 medium res 640x200 low res 320x200
Palette	512
Colours	monochrome in high res, 4 colours in medium res, 16 in low res

Display

TV	
520STFM	yes.
Other models	via TV modulator
Monitor output	RGB/monochrome
Monitor supplied	no

Options:dedicated Atari monitors, in monochrome or colour, SM124 high res mono, SC1224, medium res, colour

● **Performance**

Sprites	none
Scrolling`	good vertical; poor horizontal

High resolution is only available on mono monitors; medium and low resolutions are only available on colour monitors or TVs.

▨ Sound

Sound chip	AY-3-8912
Stereo output	no
MIDI	yes
Channels	three

● **Performance**
8 octaves, envelope shaping.

▨ Hardware

KEYBOARD: 96 keys including 10 function keys. Full travel keyboard with audible click.

JOYSTICK/MOUSE: Joystick ports are standard. Two-button mouse supplied with machine

PORTS MIDI out (5 pin DIN) ● MIDI in (5 pin DIN) ● Audio out ● Audio in ● RGB monitor ● mono monitor ● serial/modem port ● second disk ● hard disk ● mouse/joystick ● joystick ● cartridge ● TV

In brief...

Excellent as a general purpose home machine for games, small business, and productivity – it's also the number one choice for MIDI musicians. The ST's price could still give it the edge for artists over the Amiga.

Software

EXISTING BASE: Though on the low side by 8-bit or PC standards, the number of ST titles makes it the best-supported of the new machines.

CURRENT RELEASES: Most major software houses convert their output to ST now, and several smaller houses specialise in ST titles.

PROSPECTS: Very bright indeed. Could soon rival Spectrum and C64 for number of new releases.

GAMES: Range of arcade titles isn't bad and adventures, though rarer, are generally of very high quality

GRAPHICS: Impressive, with several first-rate packages on the market.

MUSIC: excellent. Many companies producing sound editors, samplers, synths, etc

SOFTWARE FORMAT: Disk only.

SOFTWARE LOADING: A 360K disk can't hold a really large ST program, so two-disk titles are becoming increasingly common. The disk-changing these require can get tedious, especially where you've got to swap disks during play.

▨ Buylines

MAINTENANCE: One year's guarantee. Return to dealer if faulty

BEST BUY PRICE: You won't get much under the RRP, but try for special bundles. WH Smith, for instance, is selling the machine together with £200 worth of software.

SECOND HAND AVAILABILITY: Yes, look in classified ads of magazines.

The ST is an attractive looking machine with slanted function keys above similarly styled slats. It was one of the first machines to include a disk drive in the side of the console – this design is now also taken up by other manufacturers.

Atari XL/XE

Models: Atari 800XL (no longer manufactured), Atari 65XE, Atari 130XE

Package:
800XL retailers' own – look for keyboard, plus tape deck, joystick and software
65XE Atari Starter Pack includes keyboard, tape deck, joystick, software (10 games)
130XE Atari Starter Pack includes keyboard, tape deck, joystick, software (5 games)

Memory:

800Xl	64K
65XE	64K
130 XE	128K

Processor:	6502

Recommended Retail Price

800XL	none
65XE	£129.99
130XE	£139.99

▨ Disks

Format	5.25 inch
Price	Around £1.00
Capacity	360K formatted
Software	Most titles available on disk
Add-on drives	Yes
Built-in	No

● **Performance** Good

▨ Graphics

Resolution	320x192
Palette	256
Colours	128

Display

TV	Yes
Monitor output	Composite video
Monitor supplied	No
Options	No.Atari dedicated monitor manufactured. Use TV or monitor with composite video output

● **Performance**

Sprites	8
Scrolling	No
Speed	Average

▨ Sound

Sound chip	Atari custom chip
Speaker quality	Output thru TV
Stereo output	No
MIDI	Not supplied. Third party interfaces available.
Channels	4
● **Performance**	Good

▨ Hardware

KEYBOARD: 62 keys including some special function keys for BASIC commands

JOYSTICK/MOUSE Standard joystick ports; mouse not standard

PORTS: Rom slot ● 2 joystick ● edge connector ● monitor

In brief...

Once the choice of the dedicated arcade games player, these machines pioneered the use of sprites and quality sound. In their later configurations they remain attractive purchases for the wealth of existing software, but support is fading very rapidly and the outlook is grim.

▨ Software

EXISTING BASE: Good but long in the tooth.

CURRENT RELEASES: Thin on the ground; mostly budget.

GAMES: Arcade range is of high quality. Adventures poor to middling

GRAPHICS: Some good programs on the market.

SOFTWARE FORMAT: tape or disk. Disks are quick, but tape software can be a real bargain.

MUSIC: Well supported in this area.

PROSPECTS: Not brilliant now that attention is focused on Atari STs.

▨ Buylines

BEST BUY PRICE:
800XL shop around – machines are now scarce
65XE Dixons is offering the Starter Pack at £99.99
130XE generally as RRP

SECOND HAND AVAILABILITY: Quite a few around; look in the mags

MAINTENANCE: One year's guarantee. Return to dealer if faulty

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Commodore Amiga

Models: Amiga 500, A1000, A2000

Package: keyboard, with built-in disk drive. A1000 is discontinued, so packaging will depend on different dealer policies.

Memory:

A500	512K
A1000	256K
A2000	1024K

Processor: Motorola 68000

Recommended Retail Price

A500	£499.99
A1000	none – discontinued
A2000	£1236.25

Disks

Format	3 1/2 inch
Capacity	880K formatted
Price	Around £3.00
Software	All on disk
Extra drives	Yes
Built-in	Yes

Performance
Noisy and surprisingly sluggish

Graphics

Resolution	640x200
Palette	4096
Colours	16 in high res 32 in low res 4096 in hold and modify

Display

TV	No but modulator available for A500 only at £24.99
Monitor output	SCART
Monitor supplied	No
Options	Commodore A1081 at £349.99

Performance

Sprites	8
Scrolling	Vertical, horizontal
Speed	Very fast with right software

Graphics co-processor allows sprites to be 're-used' under some circumstances and offers powerful windowing capabilities, while block image transferrer (blitter) speeds up large-scale graphics work enormously.

Sound

Sound chip	Commodore custom chip
Stereo output	Yes
MIDI	Not built-in. Third party interfaces available.
Channels	4

Performance
Built-in text to speech synthesis, 9 octaves, programmable waveforms, amplitude and frequency modulation

Hardware

KEYBOARD: 94 key, 10 function keys, numeric keypad, separate cursor cluster

JOYSTICK/MOUSE Mouse supplied as standard

PORTS: Two joystick/mouse ● Audio output left and right ● Extra disk drive ● Serial (RS232, ● Centronics parallel ● RGB/video ● Monochrome video ● Expansion bus

Software

EXISTING BASE: Small in comparison to 8-bit machines

CURRENT RELEASES: Beginnning to pick up

GAMES: Arcade products not yet up to the capabilities of the machine. Few adventures are available, but they are generally of a good quality.

GRAPHICS: Quality and range outstanding.

MUSIC: Potentially superb. Little MIDI support as yet.

SOFTWARE FORMAT: Disk only

SOFTWARE LOADING: A noisy process

PROSPECTS: Good, but A500 needs to establish a larger user-base before becoming a prime development machine.

Buylines

BEST BUY: Not at present sold below RRP, although it can be worth checking various dealers for special packs.

SECOND HAND AVAILABILITY: Limited as yet.

MAINTENANCE: Within guarantee should be returned to the dealer.

In brief...

Stunning specification. Despite initial uncertainty, software support now seems assured. Although overshadowed by the ST in the UK to date, overseas sales (particularly in US) are high. An excellent machine for those who can afford one.

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Commodore 64/128

Models: C64, 128, 128D

Package: C64 and 128 keyboard plus C2N tape recorder, plus accesories (according to individual dealers). C128D keyboard plus disk drive.

Memory: C64, 64K; **C128,** 128K**; C128D**, 128K

Processor: C64, 6510; **128/128D**, 8502 plus Z80 for use in CP/M mode

Recommended Retail Price: C64; £159.99-£179.99† **C128** £199.99 stand-alone; £229.99 with C2N; £249.99 with C2N + software **C128D** £399.99

† according to individual dealers' packages.

Disks

Two disk drives are commonly available – the C1541 and the more recent C1571.

Format	5.25 inch
Price	£1.00 (less in bulk)
Capacity	
1541	140K formatted
1571	340K formatted
Software	Most titles available on disk
Add on drives	Yes, including third party units with improved performance
Built-in	128D only

Performance
Commodore 1541 drive is notoriously slow and noisy; 1571 marks substantial improvement.

Graphics

Resolution

C64	320x200

C128/128D: as 64 in 64 mode, plus 640x200 in 128 modes (80 column display)

Palette	16
Colours	8

Note Attribute system places minor limitations on number of colours displayable in any 8*8 pixel square.

Display TV	Yes
Monitor output	
64	Composite video
128/128D	RGB for 80 column display
Monitor supplied	No
Monitor options	
C1900M	£119.99 mono
C1901	£249.99 colour
C1084	£349.99 colour
	or suitable RGB/composite monitor

Performance

Sprites	8
Scrolling	vertical, horizontal
Speed	Good for scrolling and sprites, poor otherwise.

Hardware sprites and scrolling have proved both a blessing and a curse for Commodore graphics. They make certain tasks (particularly the programming of sprite-based shoot-em-ups) much simpler but more recent 3D software tends to run slowly (if at all).

Sound

Sound chip	8581 sound interface chip
Speaker quality	Output thru monitor
Stereo output	No
Channels	3
MIDI	No, but many third party interfaces available

Performance
Very sophisticated for the price. The Commodore 64 used to be most popular budget music computer for both MIDI and programming its on-board chip.

Hardware

KEYBOARD: Raised plastic keys with audible tactile feedback, plus function keys. Cursor key arrangement very awkward.

JOYSTICK/MOUSE: Provision for two standard joysticks. Mouse not supplied. Commodore 1350 mouse available, plus third party manufactured models.

PORTS: 2 joystick ● expansion ● cassette ● non-standard serial ● composite video (C64) RGB (128+128D) ● TV ● User port

In brief...

The 64 isan excellent games machine. The 128 and 128D can be configured for business use using the CP/M standard and giving access to a vast range of business and utility software. 64 is a particularly difficult machine to learn programming on due to outdated BASIC.

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Software

EXISTING BASE: Excellent. Only rivalled by the Spectrum, but in many cases, Commodore versions of programs are superior.

CURRENT RELEASES: Still pouring out.

GAMES: Arcade action second to none. Adventures - good selection.

GRAPHICS: Good selection – quality of graphics means that programs can be reasonably sophisticated.

MUSIC: Good wide range of sound editors, some samplers. Many MIDI utilities available.

SOFTWARE FORMAT: C64/128 – tape or disc from external dedicated tape deck (C2N) or disc drive. C128D – tape from C2N or disk from integral disk drive.

All Commodore machines require the Commodore C2N Tape Deck for loading tape-based software. Some third party interfaces are available to enable a normal domestic recorder to be used with the machines but this arrangement may not be as reliable.

SOFTWARE LOADING: Slow as always on cassette and disk loading not as fast as it should be due to slowness of dedicated drive. Most software produced with fast loader routines.

PROSPECTS: Supply will eventually slow, but Commodore games may well last longer than Spectrum, due to direct portability of games from US.

Buylines

BEST BUY PRICE: Old style C64s, dating back to before the redesign can be picked up for around £130-£150. Otherwise, with Commodore's policy of letting the dealers devise their own "bundles", it's a case of picking the one you like best.

SECOND HAND AVAILABILITY: Good for all models. Check small ads in various magazines.

MAINTENANCE: Under guarantee – take machine back to dealer. Should get straight replacement within 30 days of purchase (at dealers' discretion). Ex-guarantee – use independent repair company.

IBM & compatibles

Model: IBM's PC is the original. The many clones include Amstrad's PC 1512 and 1640 series, Tandy's 1000EX, Spectrum Bondwell 32, etc. The specifications given below will generally apply to most IBM compatibles unless particular riders are made. If you are thinking of buying a PC or compatible check all the salient details with dealers first.

Package: Depends on manufacturer. Amstrad supply a machine with monitor, with or without hard disk. You can buy the bare bones or the whole works.

Memory: usually 512K-640K

Processor: Intel 8086, 8088 or variants

Recommended Retail Price
From around £400.00 for the cheaper basic clones to £1500 for top-of-the-range clones (with hard disk, colour monitor etc.) IBM machines themselves are considerably more expensive.

Disks

Format	Mostly 5.25 inch some very new models use 3 .5 inch
Price:	Well under £1.00 for 5.25 around £3.00 for 3.5

Capacity: Almost always 360K formatted

Software:	All on disk
Add-on drives	Yes
Built-in	Yes

Performance
Reliable and pretty fast; hard disks, of course, are even faster

Graphics

Graphics are not provided as standard on PC machines, although nowadays most all machine are sold with the necessary add-on boards already installed. There are three common standards, CGA, EGA, and Hercules:

CGA (Colour Graphics Adaptor)

Resolution	320x200 low res 640x200 medium res
Palette	none as suchbut three different colour schemes available in low res
Colours	4 in low res, mono in high res

CGA is the most common PC display standard for colour systems.

EGA (Enhanced Graphics Adaptor)
Both CGA graphics modes, plus high resolution as follows

Resolution	640x350
Palette	64
Colours	16

Normally fitted as upgrade to basic machine, but comes as standard on some PCs (eg Amstrad PC1640).

Hercules

Resolution	720x348
Colours	Mono only

Often built-in on mono PCs.

These are the three most common display standards, accounting between them for almost all cheap PCs currently in production, but other adaptors do exist. Buying second hand you may well encounter machines with unusual or text-only displays.

Display

TV	no
Monitor output	Normally RGB
Monitor supplied	With most packages
Options	Dedicated monitors are usually supplied or available for machine. Generally, any RGB should do.

Sound

Sound chip	None as such – need direct speaker modulation
Speaker quality	Generally poor
Stereo output	No
MIDI	Third party interfaces available.

Performance

Not really a machine for the musician in view of the more recent competition from Atari and (at the uppper end of the market) Apple Macintosh.

Hardware

KEYBOARD: All models use raised plastic keys with audible tactile feedback and include function keys and separate numeric keypads. A wide variety of third-party keyboards is available.

JOYSTICK/MOUSE: Two different joystick standards exist, IBM (analogue) and Amstrad (Atari style - the norm for games playing). Most games support either IBM or both, but Amstrads can now be adapted to use IBM joystick. Newer models (eg, Amstrad) include mouse in package. Third party mice are available for mouseless PCs.

PORTS: Varies. Expect Centronics parallel, RS232, expansion port with most machines – but some of thes are optional.

Software

EXISTING BASE: Vast

CURRENT RELEASES: Still pouring out, with price levels dropping as well.

GAMES: Cheaper machines has meant that more and more games are being released on the PC – both arcade and adventure. CGA graphics standard use to be predominant, but an increasing number of EGA games with superior graphics are appearing. PC only recently perceived as a machine with games potential.

GRAPHICS: Many sophisticated packages for business presentation graphics; not too much for the artist.

In brief...

Superb value if you want an all-round machine, but the PC still betrays its business origins. Increasing number of games software releases, but few of these are of the coin-op arcade variety. Definitely not to be considered if entertainment is your first priority.

MUSIC: Fair selection of MIDI packages and interfaces, those these tend to be expensive.

PROSPECTS: Won't dwindle as long as there are PCs on desks

Buylines

BEST BUY PRICE: All-in-one packages – such as the Amstrad – represent good value, but if you know what you're doing even better bargains can be had from discount stores. If you don't know what you're doing go for a reputable brand.

SECOND HAND AVAILABILITY: PCs can often be picked up in auctions of computer and office goods, or through magazine adverts.

MAINTENANCE: Return to dealer if faulty, but a maintenance contract – often surprisingly cheap – can guarantee your piece of mind

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19.99	14.46	24.99	17.99
34.99	26.22	49.99	35.42

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MSX

Disks

Format: mostly 3.5 inch, a few 5.25 inch drives produced

Capacity	360K formatted (3.5")
Software`	mostly available on disk
Price of Blank Disks	about £3.00,
Add-on drives	yes
Built-in	no

● **Performance** reasonable. MSX disk-drive units tend however to be very expensive.

Graphics

Resolution		256x192
Palette	MSX 1	16
	MSX 2	256
Colours	MSX 1	16
	MSX 2	256

Display

TV	yes
Monitor output	composite video

Monitor options Some manufacturers produced dedicated models.

Monitor supplied	no

● **Performance**

Sprites	yes
Scrolling	no

Sound

Sound chip	AY-3-8910
Speaker quality	output through TV

Stereo output can be connected to external hi-fi system

MIDI third party interfaces available

Channels	3

● **Performance** good Yamaha's CX5M was designed with musical applications foremost in mind.

In brief...

Main strength of MSX is in its implementation of arcade games.There is a very active user group that partially compensates for lack of industry support. Despite the attractive discounting of some models, the purchase of an MSX machine involves a high degree of risk with regard to future support and software releases.

Hardware

KEYBOARD: Generally standard raised plastic keys

JOYSTICK/MOUSE: Standard joystick port. Third party mice available.

PORTS: Expansion bus ● cartridge slot ● monitor output ● RF TV ● audio ● tape deck ● Centronics printer ● Disk drive

Software

EXISTING BASE: reasonable, twith a number of Japanese cartridges available. Stockists now very hard to find.

CURRENT RELEASES: very few. Mostly budget or imported.

PROSPECTS: poor. While there is no shortage of software worldwide, not all UK software houses include MSX in their plans.

GAMES: some good arcade titles well-implemented, but adventures are few and far between.

GRAPHICS: not much on the market

MUSIC: Yamaha's now discontinued CX5 was configured for musical applications; thus there are a number of packages available

SOFTWARE FORMAT: tape, disk or pre-programmed games cartridge with tape. predominant.

Buylines

MAINTENANCE: One year's guarantee. Return to dealer if faulty

BEST BUY PRICE: MSX 1 can be picked up for as little as £20.00 these days. MSX 2 is scarce, but should cost between £100-£200.

SECOND HAND AVAILABILITY: Check small ads in computer press

MSX is not a computer as such, but a standard design incorporated into a number of computers manufactured by a number of (mostly) Japanese companies.

Models:
MSX 1, launched 1985, no longer manufactured, some models still available at knock-down prices. **MSX 2** is current version but machines not widely available in UK.

Package: Generally keyboard only. Some MSX 1 models can be found with tape deck and software

Memory: MSX 1 – 32K-64K; MSX 2 – 128K

Processor: Zilog Z80

Recommended Retail Price None for MSX1, MSX2 – £150 plus.

Sinclair Spectrum

Models: Plus (48K and 128K); Plus 2, Plus 3

Package: Keyboard and built-in tape/disk, plus joystick, selection of software.

Memory:

Plus	48K or 128K
Plus 2	128K
Plus 3	128K

Processor: Zilog Z80

Recommended Retail Price

Plus	none; shop around
Plus 2	£139.00
Plus 3	£199.00

Disks

(Plus 3 only)

Format	3 inch 'flippable'
Price	Around £3.00
Capacity	180K formatted per side
Software	Little as yet
Extra drives	Not yet available
Built-in	Yes

● **Performance**

Generally fast and reliable. Some hitherto unforeseen compatibility problems may arise with commercial software – but they haven't surfaced yet.

Graphics

Resolution	256x192
Palette	8
Colours	8

Only 2 colours can be used within any 8x8 pixel square. Limits graphics potential.

Display

TV	Yes
Monitor output	RGB
Monitor supplied	No
Options	No dedicated Amstrad/Sinclair monitor, but any RGB suitable.

● **Performance**

Sprites	None
Scrolling	None
Speed	Average

Despite clever programming, the Spectrum's display still compares unfavourably with both the Amstrad and Commodore machines.

Sound

Sound chip		AY-3-8912
Speaker quality	Plus	dreadful
	Plus 2 and 3	better
Channels		3
MIDI	Plus 48K	No
	Plus 2/3/128K	Yes

(non-standard socket built-in).

● **Performance**

Poor – sound has never been the Spectrum's strong point, and few Spectrum software titles make much effort in this area.

In brief...

The Spectrum is primarily a games machine and should be bought only as such. It is unsuitable for business use, with low memory capacity and only a 32 column screen display. For productivity (ie, graphics and music type applications) use, it is not really sophisticated enough for serious projects. Utilities fair but serious users will want to upgrade before too long.

Hardware

KEYBOARD: The Spectrum Plus keyboards are made of hard plastic set into the casing, with a squidgy feel and a tendency to fall off if you hold the machine upside-down. The Plus 2/3 keyboard has raised hard plastic keys. Unlike the older model, it can be used more easily for word processing.

JOYSTICK/MOUSE: Non-standard on all models. Suitable interrfaces widely available. Compatible joystick included in Plus 2 and 3 packaging. Third party mice available but mouse compatible software rare.

PORTS: 2 joystick ● RS232/Midi ● RGB monitor ● Audio ● Numeric keypad ● Expansion/I/O ● TV

Software

EXISTING BASE: Second to none.

CURRENT RELEASES: Most major software firms are continuing to bring out the majority of their titles on the Spectrum.

GAMES: A huge number of arcade titles ranging from abysmal to execellent. Wide range of adventures, many Quilled.

GRAPHICS: Fair selection, some of which squeezes better graphics performance from the machine than one would expect from the specification.

MUSIC: A couple of MIDI interfaces available, plus Cheetah Specdrum drum synth

SOFTWARE FORMAT: Plus – tape using external tape deck; Plus 2 – tape using built-in tape deck; Plus 3 – tape (using external recorder, not supplied) and disk using built-in disk drive.
N.B. Third party external disc drives are available for Plus and Plus 2 but no software standard has been established. Disk software for these models is therefore very scarce.

PROSPECTS: New releases will undoubtedly get fewer in number as the strength of the 16-bit machines (see below) grows. The user base will, however, last for a good couple of years yet.

Buylines

BEST BUY PRICE Plus can now be picked up cheaply as tno longer manufactured. Try to find a shop selling off old

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Tai Pan	6.25	10.95	5.50	-	-
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PRICE INCLUDES: 520STFM: Mouse: UK Language Disc:
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Indiana Jones	£14.95	Phantasie 3	£17.95
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stock at around £50. Curry's is offering Plus 2s at £129.99 in part exchange for an old computer.

SECOND HAND AVAILABILITY: Good. Check small ads in various magazines.
NB: The original Sinclair 48K model can still be found second-hand. If you're only interested in playing games and don't mind the rubbery keyboard, it could represent a good investment. Ensure that you get the 48K model – there is no outward way of distinguishing it from the (even earlier) 16K models, which are quite useless for running contemporary software.

MAINTENANCE: All Amstrad-badged Spectrums have a year's guarantee. If they go wrong within the guarantee period, take the machine back to the dealer which sold it to you. For pre-Amstrad Spectrums (Plus and Plus 128) bought as new and within guarantee period, contact Sinclair Research.

Nintendo

Nintendo Entertainment System

Package:
Standard version console, plus game controllers, plus 1 game (Super Mario Brothers)
Deluxe version – console, game controller, light gun, ROB robot, two games

Recommended Retail Price

Standard model	£99
Deluxe model	£159

▨ Disks

A disk system is available in Japan, using proprietary non-standard Nintendo disks. The format provides greater memory capacity and hence enhanced versions of some software (e.g. Super Mario Bros II). The system is not available in the UK at present.

▨ Graphics

Display	
TV	yes
Monitor options	not yet supported
Resolution	256x240
Palette	52

▨ Sound

Channels	3

● **Performance** includes speech synthesis

▨ Hardware

Ports: ● RF TV, video ● audio I game controller slots ● cartridge slot

MAINTENANCE: Manufacturer's guarantee.

Additions of light gun and robot make this a suitable machine for younger children.Not a true computer; recommended as games console only.

▨ Software

EXISTING BASE: Huge (in Japan)

CURRENT RELEASES: Some

PROSPECTS: Good; but rate of import will depend on machine's popularity in UK. Because of the Yen to Pound conversion rate, Japanese software is likely to remain expensive.

GAMES: good range of arcade-type software. Some arcade adventures.

GRAPHICS:	not as yet
MUSIC:	none

SOFTWARE FORMAT:

cassette	no
cartridge	yes
smart card	no
disk	not yet available in UK

▨ Buylines

BEST BUY PRICE: As RRP

SECOND HAND: Not as yet.

MAINTENANCE: Manufacturers guarantee and statutory rights if purchased new.

In brief...
A reasonable buy if a console is what you want. Interesting, too, because we may see more add-ons from Japan that give it extra power. However, at the moment, nearly all software is Japanes in origin and this is not to everyone's taste. It remains to be seen if it will receive any third-party support.

Sega Master System

Package: console, plus light gun, game controller and 1 game (Hang On)

Software format

cassette	no
cartridge	yes
smart card	yes

Recommended Retail Price £99

▨ Disks

Not available.

▨ Graphics

Resolution	256x192
Palette	64
Display	
TV	yes
Monitor options	no

▨ Sound

Channels	3

● **Performance** Good sound effects on most games.

In brief...
Japanese software base not as good as Nintendo's, but what counts is how many titles reach UK. Mastertronic have given strong support to machine, so prospects are reasonable.

▨ Hardware

PORTS: 2 game controllers ● cartridge slot
Robust casing. Not designed for future expansion. Not a true computer; recommended as games console only.

▨ Software

EXISTING BASE: large

CURRENT RELEASES: well-supported by UK distributor Mastertronic

PROSPECTS: good if support by 'Tronic and parent company Sega continues

GAMES: wide selection of arcade titles, generally considered to be of high quality. No adventures. Bulk of releases currently confined to conversions of Sega coin-op games.

GRAPHICS:	none
MUSIC:	none

▨ Buylines

BEST BUY PRICE: As RRP

MAINTENANCE:
One year's guarantee. Back to dealer if faulty.

Atari consoles

▨ Disks

XE only: see Atari XL for details

▨ Graphics

Resolution officially 320x192, 160x90 or 80x192 according to mode. Most software is produced on a res of 160x192

Palette	16
Display	
TV	yes
Monitor supplied	No
Options:	With Games System only

▨ Hardware

KEYBOARD: Only as an extra on the XE Games System. Of pretty good quality

JOYSTICK/MOUSE: All machines take standard Atari joysticks.

Models: Atari 2600
Atari XE Video Game Console
Atari XE Games System

Package
2600: console plus software
XE GS: console, software
XE GS: console, joystick, additional keyboard, light gun, software (3 games)

Recommended Retail Price

2600	£49.99
XE GC	£79.99
XE GS	£119.99

PORTS: 2600 game controller, TV, cartridge slot ● VGC as 2600, with socket for extra keyboard ● VGC as above

▨ Software

EXISTING BASE: Vast. Systems are compatible with all old Atari console games

CURRENT RELEASES: Software is still in production, but not in the same volume as a couple of years ago.

GAMES: Excellent arcade games abound; many adventures.

In brief...
The Atari range of consoles represents good value in terms of price and volume of software available. But note that the 2600 is strictly a *games* console while the VGC and VGS can both be upgraded to be used as computers.

GRAPHICS: very few

MUSIC: Hardly any

SOFTWARE FORMAT: VCS – cartridge only. VGC and VGS can use crtridge, tape, or disk (if connected)

PROSPECTS: Not much better than reasonable. Much depends on sales this Christmas.

▨ Buylines

BEST BUY PRICE:2600 check out Dixon's for special offers. Console and System check for variations in packages listed above; otherwise, as RRP.

SECOND HAND AVAILABLITY: Good; look in computer magazines

MAINTENANCE: Manufacturers' guarantee. Any problems – return to dealer.

SOFTWARE BUYERS GUIDE

There's not much point in buying a computer without getting some software to run on it. And since this is the festive season we're presenting you with our selection of 50 games that should keep you warm with excitement this winter.

There's something here for everybody, from the megalomaniacal strategy of *Balance of Power* to the sheer arcade playability of *Bubble Bobble.*

Have fun!

AIRBALL

Microdeal ● Atari ST ● £24.95dk

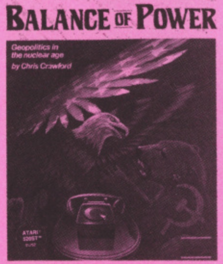
Multi-coloured three dimensional arcade adventure that owes something to the Ultimate style but is years ahead in terms of graphic detail and presentation. You, as the airball in question, must negotiate corridors and rooms full of various obstacles – all spelling instant death. An outstanding rendition of a popular genre.

ARKANOID

Imagine ● Spectrum £7.95cs ● C64 £8.95cs, £12.95dk ● Amstrad £8.95cs, £14.95dk ● Atari XL/XE £8.95cs ● Atari ST £14.95dk ● MSX £8.95cs ● IBM PC £19.95dk

ARKANOID
TAITO
Imagine

Conversion from *Arkanoid* the coin-op, in its turn the best version of the classic *Breakout*. Simple in concept: the player controls a bat at the base of the screen, whizzing it left and right. The object is to keep a small ball in play, bouncing it off the bat to destroy formations of bricks in the top half of the screen. Eliminate all the bricks and move on to the next of 33 screens. Clever extra features contribute to the addictiveness. As a faithful coin-op conversion, *Arkanoid* comes out top, but for a different slant on the same theme and some nifty music, try ASL's *Impact*, which also builds up the difficulty levels more gradually.



BALANCE OF POWER

Mindscape/Mirrorsoft ● Amiga £26.95dk ● Atari ST £26.95dk ● IBM PC £26.95dk ● Mac £26.95dk

Definitive strategy game for 16-bitters. The player takes the role of one of the superpowers, while either the computer or a friend takes the other. Then it's a case of trying to win friends and influence people on a global scale. This can be achieved in a number of ways, including supplying arms or financial aid to radical factions in the hope of toppling a government which is not receptive to the great American or Russian dream (depending on which side you're playing). It's complex, involving and it's difficult to play in ten minute sessions. Absorbing stuff that gives an insight into the devious world of geopolitics.

BOULDERDASH

Prism Leisure Corporation ● Spectrum £2.99cs ● C64 £2.99cs ● Amstrad £2.99cs

A game that has everything – instant addiction, long-term challenge, frenetic excitement as the clock ticks down and extremely tricky puzzles. You must collect jewels hidden in caverns, digging away earth and boulders to get at them. Boulders can drop and cause you serious damage, while the jewels are often hidden by seemingly impenetrable walls. Complex, but great fun. *Boulderdash* is a classic you can't afford to miss in its budget incarnation.

BOUNDER

Gremlin Graphics ● Spectrum £7.95cs ● C64 £9.95cs £12.95dk ● Amstrad £8.95cs £13.95dk ●

AMSTRAD CPC
BOULDER DASH
FIRST STAR
PRISM LEISURE CORPORATION

A great arcade bounce-em-up, and very addictive too. You guide a ball as it bounces from one platform to another, high above the vertically scrolling landscape. Land on marked squares and you can stay aloft longer or gain a mystery bonus. Fill in a gap or hit one of the game's many nasties, however, and you'll lose a life. Bonus bouncing sections at the end of each level help vary the pace, and those tough gaps really keep you coming back for more. Bright, witty graphics, great music – and it's so playable.

BUBBLE BOBBLE

Firebird ● Spectrum £7.95cs ● C64 £8.95cs £12.95dk ● Amstrad £8.95cs £14.95dk ● Atari ST £19.95dk

Playability is the essence of this two-player coin-op conversion. You and a friend play bubble-blowing dinosaurs, travelling through 100 maze-and-platform screens, fighting off the "bullies" by encapsulating them in your bubbles to turn them into juicy fruit. More firepower

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and various bonuses await as you reach the more dificult later screens. Enormously good fun, if a little on the cutesy side. Can also be played as one player against the computer.

CHESS MASTER 2000

Electronic Arts ● C64 £9.95cs £14.95dk● Amiga £24.95dk ● Atari ST £24.95dk ● IBM PC £24.95dk

Strongest chess game on the Amiga, with excellent graphics, 2D or 3D viewpoint, 12 levels of difficulty and all the playing options you could wish for. Plus some fairly nifty speech synthesis.

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COLOSSUS CHESS 4

CDS ● Spectrum £9.95cs● C64 £9.95cs £14.95dk ● Amstrad £9.95cs £13.95dk ● Atari XL/XE £9.95cs £14.95dk

Best bet for 8-bit machine owners, with choice of 2D or 3D view, umpteen levels of difficulty, and myriad options which enable you to play, watch, work out chess problems, etc against a fine computer opponent.

COLOSSUS 4 CHESS
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COMMODORE 64 DISK

DECATHLON

Firebird ● Spectrum ● £1.99cs ● C64 £1.99cs ● Amstrad £1.99cs

Exhausting but exhilarating, *Decathlon* is the supreme joystick-waggling test as you run, jump and throw your way to a gold medal and world records. Two-player option provides you with competition and at the price it's unbeatable.

ELITE

Firebird ● Spectrum £14.95cs● C64 £14.95cs £17.95dk ● Amstrad £12.95cs £14.95dk ● BBC £12.95cs £14.95dk (available from Superior Software)

Still the best space trading game, *Elite* set a standard for other companies to follow. One of the first space games to use vector graphics, it's a shooting and trading effort set across several galaxies, with plenty of variety to the gameplay. You can trade legal goods in (relatively) safe systems, or run the gauntlet of pirates in the galaxies' danger spots with your hold full of contraband. Either way there's a nice line in zero-G dogfighting, and as big a task as you'll find anywhere.

COMMODORE 64
ELITE
FIREBIRD
GOLD EDITION

EXOLON

Hewson ● Spectrum £7.95cs ● C64 £8.95cs £12.95dk ● Amstrad £8.95cs £14.95dk

Graphically superb horizontally scrolling shoot-em-up in which you run, duck and jump your way along a planet's surface blasting away at alien defences. A gun and a missile launcher are used to blast the foes, but if things are still too tough then you can grab an exoskeleton for extra protection and fire power.

FLIGHT SIMULATOR 2

Sub-Logic ● Atari ST £49.95dk ● Amiga £49.95d ● IBM PC £49.95dk

SPECTRUM 48 128
HEAD OVER HEELS
ocean

The venerable godfather of flight simulations, *Flight Sim II* is the standard by which all others are judged. Although it spent a zillion weeks on top of the US charts, it's difficult to get hold of in the UK. If you have the technology, this is an essential purchase.

HEAD OVER HEELS

Ocean ● Spectrum £7.95cs ● C64 £8.95cs £12.95dk● Amstrad £8.95cs £14.95dk ● MSX £8.95cs ● IBM PC £19.95dk

3D exploration reaches its peak with this huge intricate masterpiece. You play two characters – Head and Heels – as you search for the crowns that will free the galaxy. The puzzles can get very difficult indeed, and you'll often have to split Head and Heels up to use their different capabilities. The game's 300 locations are wittily drawn, and the animation is excellent throughout. A real classic.

HIGHWAY ENCOUNTER

Vortex (available on *The Best of 3D* compilation from US Gold) ● Spectrum £8.99cs ● Amstrad £8.99cs

Each game in this compilation is an excellent example of Vortex's 3D animation and tough gameplay, but *Highway Encounter* stands out in both departments, as you plot your route along said highway fighting off threats from a mutant tribe of dustbins.

SILVER 199 RANGE
SPECTRUM 48/128/+2
I, BALL
FIREBIRD

I, BALL

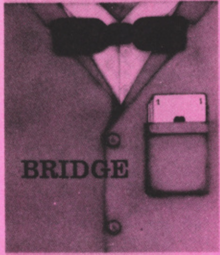
Firebird ● Spectrum £1.99cs ● C64 £1.99cs

A vertically scrolling shoot-em-up in which your mission is to rescue your pals who have been kidnapped by that embodiment of evil, Terry Ball. As a ball yourself, armed with a small front-firing gun, saving your friends could prove tough but there are loads of extra weapons you can pick up on the way to help, such as smart bombs or the awesome Rainbow Ripple laser, which as every good ball knows is not to be trifled with.

INFOGRAMES' BRIDGE

Infogrames ● Amstrad £12.95cs £15.95dk ● MSX £12.95cs

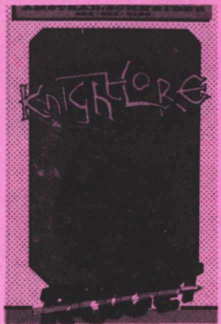
Graphically the best of all contract bridge simulations, with large playing cards depicted against a suitably green baize background. Plays a good game (for a computer, which after all is a bit short in the imagination and flair department), and features a wide range of options and bidding conventions which you can toggle on and off according to your style.



KNIGHT LORE

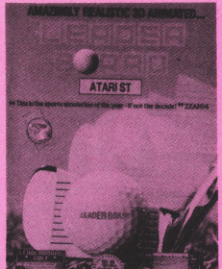
Ricochet ● Spectrum ● £1.99cs ● Amstrad £1.99cs ● BBC £1.99cs

Classic mouldbreaker from Ultimate that set the standard for 3D games for years afterwards – and the first to use mono graphics on the Spectrum to avoid attribute clash (it's more colourful on other versions). The result is beautifully detailed screens, arcade adventure exploration on a grand scale, tough visual puzzles and a mammoth quest. The programming techniques have been improved on since, but *Knight Lore* is still an essential part of everyone's collection, and at a budget price, you have no excuse...



LAST NINJA

System 3 ● Spectrum £9.99cs ● C64 £9.99cs £14.99dk ● Amstrad £9.99cs £14.99dk ● Atari ST £19.99dk



One of the most recent martial arts type games, and one of the best. Superb graphics combine with complex manoeuvres to produce top quality kicks and punches against a wide variety of opponents met on your travels through the scrolling landscape.

LEADERBOARD

Access/US Gold ● Spectrum £8.99 ● C64 £9.99cs £14.99dk● Amstrad £9.99cs £14.99dk ● Atari ST £19.99dk

If you only buy one golf simulation for your collection, make sure it's *Leaderboard*. It's head and shoulders above everything else on the playability and realism stakes, easy to get into, delightful graphics, and some wicked courses. Once you've mastered the courses on the original version, tackle *Tournament Leaderboard* and then *World Class*

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Leaderboard (based on real courses, including St Andrews, and also containing the Gauntlet Country Club, a course devised by Access to be as difficult as possible).

LIGHT FORCE
FTL
FASTER-THAN-LIGHT
AMSTRAD

LIGHTFORCE

FTL ● Spectrum £7.95cs ● C64 £8.95cs £13.95dk ● Amstrad £8.95cs £13.95dk

Fast vertically scrolling shoot-em-up, which broke some new ground on the Spectrum by using plenty of colours without an attribute clash in sight. Basically, it's a question of shooting the descending aliens and destroying the installations. Varied aliens attacking in different formations make this a demanding game which can easily become a habit.

LORDS OF MIDNIGHT

Beyond ● Spectrum £9.95 cs ● C64 £9.95cs £11.95dk

A fantasy wargame which can be played either as a wargame or as a graphic adventure. The best way to play the game is to combine the two elements and play as one epic. The wargame aspect is the most testing and enjoyable, involving the player controlling four characters independently. One of the most involving and atmospheric games you could hope to play, and unusual in its use of 'landscaping' – a method of presenting a view of the terrain in all directions, giving the player 32,000 possible panoramic displays.

Amsoft
The Lords of Midnight
SOFT 957 CASSETTE
BEYOND

MAGIC KNIGHT TRILOGY

Mastertronic ● Knight tyme Spectrum £2.99 cs Amstrad £2.99cs ● Spellbound Spectrum £2.99 cs Amstrad £2.99 cs C64 £2.99 cs ● Stormbringer Spectrum £2.99 cs Amstrad £2.99 cs

This trilogy is a series of menu-driven arcade adventures which, as well as all the expected running and jumping, have a complex system of interaction between characters. In *Spellbound* you must rescue Gimbal the Wizard from the fearsome Castle of Karn; in *Knight Tyme* you have to find a way back in time after being catapulted into the 25th century, while in *Stormbringer*, the final part, we find that the magic knight has been split in two, one part good, the other evil. You can't kill yourself, so the only solution is to merge the two halves. But how? Lots of action, plenty of thought and good graphics make all three winners.

MARSPORT
GARGOYLE GAMES
AMSTRAD 464

MARSPORT

Gargoyle Games ● Spectrum £9.95cs ● Amstrad £9.95cs £13.95dk

Take the part of Commander John Marsh, Earth's last hope in the struggle against the Sept in this arcade adventure packed with puzzles to solve and aliens to zap. The 3D animation is great as the main character wanders around the enormous space station where the game is set. Like the earlier Gargoyle games, *Tir Na Nog* and *Dun Darach*, this is good, thought-provoking stuff.

MATCH DAY

Ocean ● Spectrum £7.95cs ● C64 £8.95cs £13.95dk

Definitely *the* football game on micros; magnificent animation, great gameplay, vicious and skilful computer opponents. A possible rival to Match Day looms on the horizon, however – *Match Day 2* is soon due for release on Commodore and Amstrad CPC machines.

MERCENARY

Novagen ● C64 £9.95cs £12.95dk ● Amstrad £9.95cs £19.95dk

Fly around a city of strange buildings and explore the maze of underground passages all presented to you in fast, smooth vector graphics. Your goal is to escape from war-torn Targ by buying, stealing or earning an interstellar ship. Join`forces with either of the warring Paliars or Mechanoids or play them off against each other.

PITSTOP 2

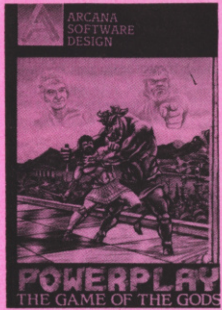
Epyx/US Gold ● Available only on Epyx Epics compilation ● C64 £9.95cs £14.95dk ● IBM PC £29.95dk (in compilation with Winter Games and Summer Games 2)

Thrilling racing game where the escreen is split into two and you can race the computer or a friend. Lots of different Grand Prix circuits, tyre blow-outs and of course the all-important pitstops guarantee to give you hand cramp and your brain a real racing treat.

POWERPLAY

Arcana ● Amstrad £8.95cs £14.95dk ● C64 £8.95cs £14.95dk

If you want to try out your general knowledge, we reckon you'd be better off with this original and challenging combination of strategy game and quiz than with the admittedly monster-selling *Trivial Pursuit.* Graphically very pretty in its setting on Mount Olympus, home of the Gods.



QUEDEX

Thalamus ● C64 £9.99cs £14.99dk

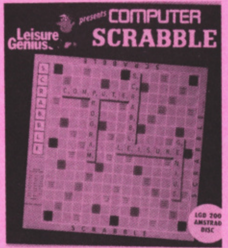
In this impressively challenging game you must steer a metallic ball through ten different screens of mazes, bonuses and obstacles, all within a set time limit. This simple game concept has a host of added gameplay features which make it particularly pleasing: you can carry over unused time to the next screen, so take on easy screens first and shore up plenty of time to tackle the more fiendish ones; and you can tackle the different screens, or 'planes' in any order you wish. Excellent graphics and the play is utterly absorbing.

REVS PLUS

C64 £9.95cs £12.95dk ● BBC £12.95cs £14.95dk (available from Superior Software)

Revs was one of the first racing games to portray real circuits, starting with Brands Hatch; *Revs Plus* adds five more: Silverstone, Snetterton, Nurburgring, Donington Park and Oulton Park. Features high quality graphics, superb sound effects and a complex set of controls for your car which adds to the realism of the game. Weaving around the other racers and negotiating the corners, particularly the notorious chicane, call for practice and precision control.

Knight Tyme
SPECTRUM 48K
FORWARD INTO THE NIGHT
TIME & TIDE WAIT FOR NO MAN
M.A.D. GAMES


Leisure Genius presents COMPUTER SCRABBLE
LGD 200 AMSTRAD DISC

SCRABBLE

Leisure Genius ● Spectrum £9.95cs ● C64 £12.95cs £14.95dk ● Amstrad £9.95cs £14.95dk ● IBM PC £24.95dk

The hugely popular word game translated very successfully on to the micro. Fast, excellent display, and a surprisingly large vocabulary (even if it does include some strange looking words on occasions). Will give even strong humans a tough game at the higher levels.

BEYOND
CHALLENGING SOFTWARE
SHADOWFIRE

SENTINEL

Firebird ● Spectrum £9.95cs ● C64 £9.95cs £14.95d ● Amstrad £9.95cs £14.95dk ● Atari ST £19.95dk

Bizarre and compelling strategy game game played over the chequered surface of a planet dominated by the Sentinel. Fundamentally you have to absorb energy while trying to stop the Sentinel from absorbing yours. A clear brain and fast trigger finger are both necessary in this very original and large – 10,000 possible landscapes – game.

SHADOWFIRE

Beyond ● Spectrum £9.95 ● C64 £9.95cs £11.95dk ● Amstrad £9.95cs £14.95dk

This strategy game was one of the first to be icon-driven, and is still one of the best. The player takes charge of six characters collectively known as the Enigma Force, and uses them in an attempt to rescue the ambassador Kryxix, who is ebing held captive by that scoundrel General Zoff. Each character is manipulated separately using the icons from various

TURTLESOFT

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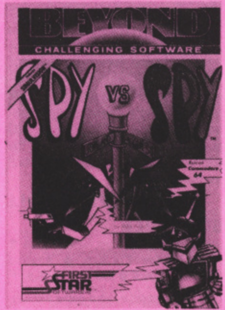
menus that can be called up. They have different characteristics, and their individual talents must be exploited in order to survive. Played against a very tough time limit, *Shadowfire* requires the player to react swiftly under pressure and stretches tactical abilities to the full.

SHANGHAI

Activision C64 £9.99cs £14.99dk ● Atari ST £19.99dk ● Amiga £24.99dk ● IBM PC £19.99dk



Thoroughly addictive patience-style game played with representations of Mah-Jongg tiles. The 144 pieces are stacked in a rough pyramid shape, and the player must remove exact matching pairs of those tiles which are free, ie, which can be taken from the pyramid without dislodging any other tiles. The object is to remove all tiles. Optional features include two player, tournament and time limits. All versions are extremely playable, but the stunning graphics on the Amiga version ensure that it will get loaded up again and again.

SKULLDIGGERY

Nexus ● Atari ST £19.95

Boulderdash -clone that completely outdoes the original on this particular machine. Again (see *Boulderdash*, above) you're digging for diamonds in caverns over 100 different screens – with a time limit for each screen. *Skulldiggery* scores on playability (easier screens to begin with and a choice of starting point) and its entertaining two-player option.

SORCERY

Virgin ● Amstrad £8.95cs ● C64 £8.95cs

As near to graphic perfection as you're likely to get, this arcade adventure is no slouch on the gameplay side either. As a sorceror on the side of good you have to fly round the landscape – dungeons, waterfalls, castle battlements, etc – freeing your imprisoned companions. Scattered around you'll find weapons to dispose of nasties and keys to help you explore further, but you'll have to plan their use carefully. Good to listen and great to play.

SORCERY
FOR THE SPECTRUM

SPINDIZZY

Electric Dreams ● Spectrum £9.99cs ● C64 £9.99cs £14.99dk ● Amstrad £9.99cs £14.99dk

Tremendous stuff; steer your spinning top over tough obstacles and collect jewels, against a fiendish time limit. The game landscape is a vast system of catwalks, ramps, towers, and trampolines surrounded by lethal drops – and NO safety rails. There are floor switches to activate lifts and bridge gaps, but tripping them in the right order can be harder than it looks. A few bad guys and a lot of nice touches, but the exploration's the thing.

EPYX
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SUMMER GAMES
International

SPY v SPY

Beyond ● Spectrum £9.95cs ● C64 £9.95cs £14.95dk ● Amstrad £9.95cs £14.95dk

It's the spies from MAD magazine up to their old tricks. The action takes place in an embassy where the spies compete to find a variety of objects, put them in a bag and escape in an airplane. Each spy has a variety of traps he can set in order to delay the other's progress, but be careful that they don't backfire.

STARGLIDER

Rainbird ● Spectrum £14.95cs £19.95dk ● C64 £14.95cs £17.95dk ● Amstrad £14.95cs £19.95dk ● Atari ST £24.95dk ● Amiga £24.95dk ● IBM PC £19.95dk

Starglider is a shoot-em-up cum strategy game boasting vector graphics at their very best. The screen is essentially your view from the cockpit, your objective is to destroy the 'starglider', flagship of the Egron forces who have invaded your homeland Novenia. Standard issue scenario, but an outstanding game.

STARGLIDER

SUMMER GAMES

Epyx/US Gold ● C64 £9.95 cs £14.95dk ● Atari XE £14.95dk (Summer Games 1 only) ● IBM PC £29.95dk

Epyx sporting simulations are of high quality but none have quite captured the playability and style of the original Summer Games and its immediate successor, Summer Games 2. One to six players can take part in high jump, gymnastics, springboard diving, clay pigeon shooting, swimming, pole vault – and others – with lovely large graphics and smooth animation throughout. Control of your athlete can be complex so practice is recommended.

ACADEMY
TAU CETI II
CRL
SPECTRUM

TAU CETI/ACADEMY

CRL ● Spectrum £9.95cs ● C64 £9.95cs £14.95dk ● Amstrad £9.95cs £14.95dk ● Atari ST £19.95dk ● Amiga £19.95dk

Flight simulator/shoot-em-up and its sequel which are both incredibly smooth and well put together. The attention to detail is impeccable as you set off on hair-raising missions as a space cadet. In *Academy* you get to design your own space skimmer craft as well.

THEATRE EUROPE

PSS ● Spectrum £9.95cs ● C64/128 £9.95cs £14.95dk ● Amstrad £9.95cs £14.95dk

Set just into the future, this strategy game covers the first 30 days fighting between the NATO countries and Warsaw Pact. If you play as NATO supreme commander your objective is to prevent invasion of West Germany at all costs; if you play as Warsaw Pact your aim is overrun West Germany. There are four basic phases to the game: movement, attack, resupply and air. You will also be given the option to use tactical chemical weapons in attacks. At its new cheaper price, *Theatre Europe* is a gift. It comes frighteningly close to predicting the future for Europe should the unthinkable happen.

COMMODORE 64/128
THEATRE EUROPE
WARGAMERS
CLASSIC CONFLICTS

THINK!
Chrome Tape

THINK!

Firebird ● Spectrum £1.99cs ● C64 £1.99cs ● Amstrad £1.99cs

Originally released by Ariolasoft at full price, but now available for a fraction of that from Firebird. It's a horribly addictive game played on a 6x6 grid – either one or two player – in which you attempt to connect four counters, horizontally, vertically or diagonally. A compelling puzzle which incorporates many additional features and skill levels.

THRUST

Firebird ● Spectrum £1.99cs ● C64 £1.99cs ● Amstrad £1.99cs

Terrifyingly sensitive controls and a large helping of real-life physics make this budget title an absolute must. Flying down through the caverns of an enemy-held planet, you have to pick up fuel and destroy hostile gun turrets without crashing into the tunnel walls. Tough enough as it is, but then you've got to make the return journey with a heavy load slung under your craft. Very mean, very addictive.

SILVER 199 RANGE
THRUST

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TOMAHAWK

Digital Integration ● Spectrum £9.95cs ● Amstrad £9.95cs £14.95dk ● Atari ST £24.95dk

One of the all-time great flight simulators, *Tomahawk* also has a strong combat edge to it. Flying a US Army Apache helicopter is a complex business, and the game's realistic controls make no concessions for learner pilots. Choode one of the three combat missions and you can fly out to attack ground targets, while keeping a weather eye oopen for enemy aircraft. Landscape, buildings and vehicles are all drawn in crisp vector graphics.

URIDIUM

Hewson ● Spectrum £8.95cs ● C64 £9.95cs £12.95dk ● BBC £9.95cs £14.95dk

The piece de resistance of scrolling shoot-em-ups: blast the dreadnought and attacking ships while dodging around any large structures. Great metallic-looking dreadnoughts and the smoothest scrolling you'll ever see put this head and shoulders above the opposition. A game not to be missed, especially now that C64 versions come packages with the excellent *Paradroid*.

VULCAN

CCS● Spectrum £9.95cs ● Amstrad £9.95cs

An elegant, simple and ingenious wargame, *Vulcan* covers the Tunisian campaign of 1942-43. A huge playing area and air attack phase make the game an improvement over the same author's earlier works *Arnhem* and *Desert Rats*. *Vulcan* is fast, efficient and simple to play, and no self-respecting wargamer should be without it.

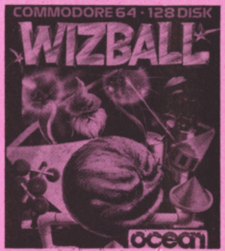
VULCAN
The Tunisian Campaign
SPECTRUM 48K/128K BY R. T. SMITH.

WIZBALL

Ocean ● Spectrum£7.95cs ● Amstrad £8.95cs £12.95dk ● C64 £8.95cs £14.95dk

A compelling and original ball game in which you become the wizball and attempt to conquer the colour creatures who are out to eliminate the spectrum and render the landscape grey and drab. Controlling the wizball is great fun and makes this one of the most playable game to have appeared for a long time.

THE BATTLE BEGINS
48K SPECTRUM
martech
TOMY



XOR

Logotron ● Spectrum £7.95cs ● Amstrad £9.95cs £14.95dk ● BBC £9.95cs £12.95dk

Extremely tricky maze game involving the player controlling two shields, and collecting masks through 15 mazes, which increase in complexity as you progress. Also in later stages, fish and chickens lie in wait, often blocking the masks and just waiting to fall on you and bring your quest to a premature end. Later still, the fish and chickens are the least of your worries as bombs, transporters and dolls crop up to conspire against you. Smooth scrolling, simple graphics, this one requires planning to complete successfully.

ZOIDS

Martech ● Spectrum £7.95cs ● C64 £8.95cs £14.95dk ● Amstrad £8.95cs £14.95dk

The game of the toy, an icon-driven arcade adventure, in which you fuse your mind with a zoid, then stomp around the zoidstar in search of the pieces of the mighty Zoidzilla. Tactics are needed if you're to survive long enough to come near to completing this thrilling game. It takes a while to get into, but it becomes so engrossing that it's well worth persevering.

Readers' Page

This space (and much, much more if you want it) is waiting to be filled by YOU...

Small ads, club announcements, event details, pen pals, adventure contacts. If you want to reach out to tens of thousands of readers spread around the world then this is the place to do it. Entry is FREE but please note that software sales announcements and trade advertisements will not be accepted.

Adventure Helpline...

From next month we'll be printing the names and addresses of those brave souls who have entered the darkest locations of Adventureland - and returned to tell the tale. If you have completed an adventure and would like to help others who may be experiencing difficulty with the game, then use the form below to list the games you've completed and post it off post-haste! Adventure contacts have found in the past that they not only get the satisfaction of helping others, but also make many friends in the process. Fame, immortality, and international recognition at last!

✂-------------------------------

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(use this form to send in your entry for inclusion on the Ping Pages Readers' Section. Write in block capitals. Photocopies are acceptable)

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THE BLITTER END...

Thanks for the melody...

Bach is probably spinning in his grave – Westhill Music have come up with a program for the Amstrad that churns out melodies in three part harmony, ad infinitum. If any of them sound promising, just hit a key and it'll jot them down on your printer in rudimentary manuscript form. Then all you have to do is add a copyright notice, post it to John peel, wait for the millions to roll in, and no-one will ever know...

Programmer Brian james claims to have taken over seven years to develop *Mastercomposer*. the program composes in any key and in different styles – jigs, waltzes, calypsos and amrches. 'If chess programs demonstrate 'machine intelligence'., then *Mastercomposer* demonstrates machine creativity', warbles the blurb that comes with the package. Contact Westhill Music, 75 Beech Road, Westhill, Skene, Aberdeenshire, AB3 6WR – but at £49 for the full version (£15 for a slimmed-down edition) it's not exactly going for a song...

Next month..

Clear up the post-Xmas blues with an effervescent New Year dose of ACE! We'll be administering:

- **CENSORSHIP – could they cut games?**
- **the complete business on GAMES CREATORS**
- **a review of the incredible QUANTUM PAINTBOX for the ST**
- **a musical bash-em-up of DRUMKIT reviews**
- **an interview with the President of Jap arcade giants CAPCOM**
- **pink pages expanded to include PERIPHERALS**
- **a trenchant LOOK BACK AT 87 by a major industry figure**

PLUS all the usual reviews, news, adventures and letters.

Better Blitter

Jez San, author of Rainbird vector graphics hit *Starglider* , took time off from the game's soon-to-appear (but as yet untitled) sequel to phone us and point out a king-sized OOPS in ACE issue 3. It appears that the Amiga blitter column in the Upgrade Stakes feature should have been *twice* the height it actually was, giving it an altogether more impressive showing. OK, we'll come clean on this one: it was - err - a typographical error.

Blankety Blank

A handful of gamesplayers have been having trouble with their Amstrad disks of *Gauntlet* . The disks in question had their Gauntlet labels stuck on rather clumsily, and on closer inspection proved to have *Basildon Bond* labels (as in *The Adventures of..*) underneath. So did the disks have the wrong game on them, you ask? No; actually, they were totally blank. Curiouser and curiouser...

Gary Lineker flies in to start Gremlin's promotional push for the computer game and board game bearing his name. Gary's been goal-less so far this season for Barcelona; will this affect sales of the program?

Thanks to...

This month the ACE team take their hats off to: **Tim Moore** (*Liberator*, ST *Solomon's Key* and many others) for a great little ST freeze-frame utility that should come in very handy indeed; **Ian Burley** for some triffic photos at short notice; **Bath Computer Shack** for their help with earlier issues; and **Deith Leisure** of London without whom Arcade ACE would be impossible.

PR problems

Many software houses hire PR companies to handle their publicity for them. And many PR companies handle more than one software house. Headlines, for instance, look after CRL and Martech – among others.

So perhaps we shouldn't be too surprised that one fine morning a press release came in telling us all about the latest CRL game – on notepaper headed Martech. Or is this just the first stage in a massive amalgamation? We'll have a better idea when we get the next press release...

Funny photos

It's been 'Let's send ACE some bizarre photos of women' month this month, it seems: in the red corner, some very unpleasant screenshots of disembowelled women slain by the Whitechapel murderer (no names, no publicity); and in the blue corner, some lurid digitised pics of the improbably named Tina Small, sent in by a reader of peculiar tastes. In a corner all of its very own, however, is this one of self-styled St Bride's headmistress Marianne Scarlett (joint authoress of *Jack the Ripper*) resplendent in her Victorian garb.

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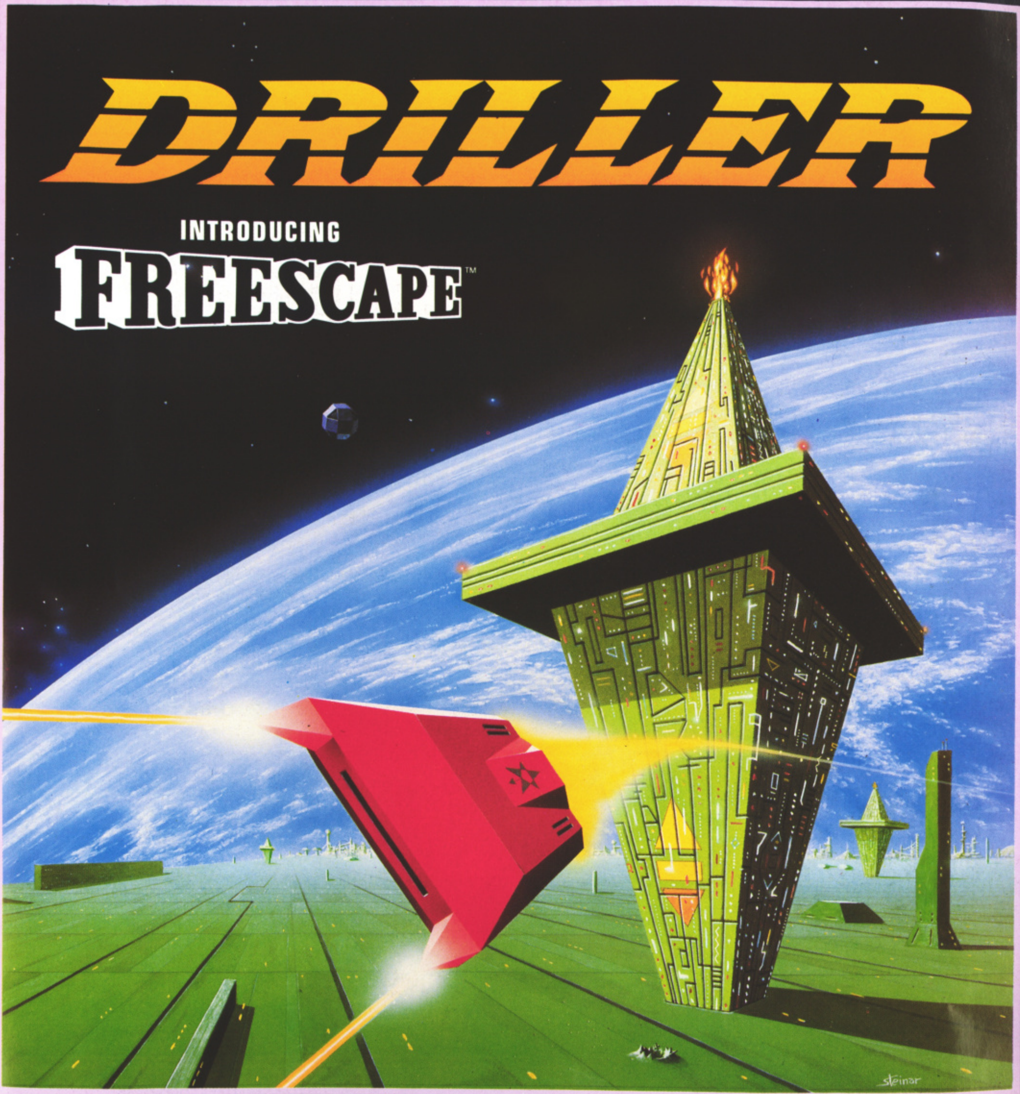

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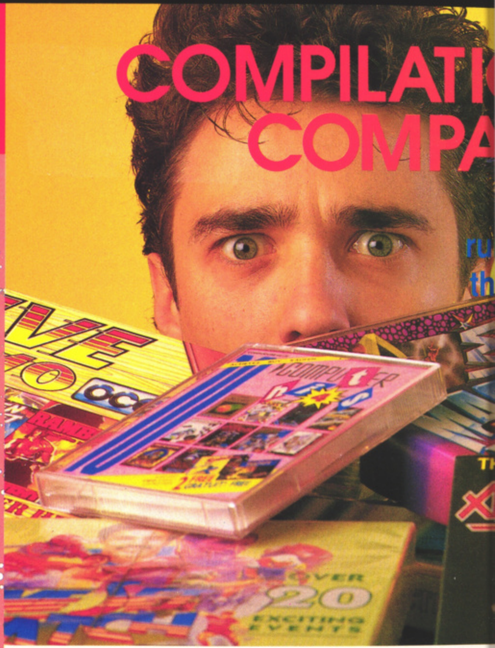

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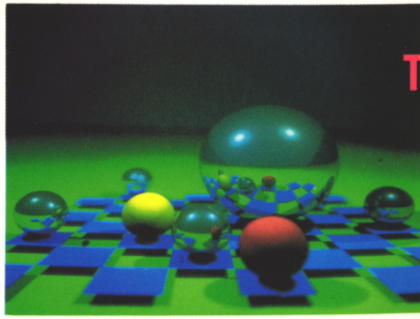

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